

# Numeracy: Skills Development Booklet - Introductory 2ed.

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## Numeracy: Skills Development Booklet - Introductory 2ed

By Michael Carolan

**DELIVER Educational Consulting (978-1-925172-44-7)**

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- Literacy - Foundation 2ed (2019)
- Literacy - Intermediate 4ed (2019)
- Literacy - Senior 2ed (2019)
- Numeracy - Foundation 2ed (2019)
- Numeracy - Intermediate 2ed (2019)
- Numeracy - Senior 2ed (2019)
- Personal Development - Foundation (2018)
- Personal Development - Intermediate 3ed (2016)
- Personal Development - Senior 2ed (2016)
- Work Related Skills - Foundation (2014)
- Work Related Skills - Intermediate 3ed (2016)
- Work Related Skills - Senior 2ed (2014)

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Available for Careers, Pathways and Work Education & VCAL

- Career Pathways 2ed (2016)
- Work Placement Journal (2015)
- Work Experience Journal (2014)
- Personal Development Planner - Introductory (2015)
- Personal Development Planner - Advanced (2015)

Available for industry-specific work education

- Retail Trade Industry - Foundation (2014)
- Retail Trade Industry - Intermediate (2014)
- Community Services - Foundation (2014)
- Community Services - Intermediate (2014)

Available for Industry & Enterprise

- I&E Unit 1: Workplace Participation 4ed (2019)
- I&E Unit 1: Workplace Participation - e-version (2019)
- I&E Units 1&2: Towards an Enterprising You 5ed (2019)
- I&E Units 3&4: Towards an Enterprising Australia 4ed (2019)

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## Attention: VCAL and Applied Learning, Careers, Pathways, and Work Education Co-ordinators and teachers.

### New editions of VCAL Work Related Skills and Personal Development Skills titles for 2020 and beyond.

All new releases for 2020 now available, more details on the next page.

- ✓ PDS - Foundation 2ed, PDS Intermediate 4ed, and PDS Senior 3ed.
- ✓ WRS - Foundation 2ed, WRS Intermediate 4ed, and WRS Senior 3ed.
- ✓ PDS Activity Planner - Foundation, PDS Activity & Project Planner - Intermediate, and PDS Project Planner - Senior.

In 2019 new editions of VCAL Numeracy and Literacy titles were released.

- ✓ Numeracy - Foundation 2ed, Numeracy Intermediate 2ed (units 1&2), Numeracy Senior 2ed (units 1&2).
- ✓ Literacy - Foundation 2ed, Literacy Intermediate 4ed, Literacy Senior 2ed.

In 2019 new editions of VCE Industry and Enterprise for 2019 were released.

- ✓ I&E Unit 1: Workplace Participation 4ed, I&E Units 1&2: Towards an Enterprising You 5ed, and I&E Units 3&4: Towards an Enterprising Australia 4ed.

Look for more information about these new resources, and others, online or through the emails.

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For VCAL, Career Pathways, Applied Learning and Work Education/Work Studies.

All resources below are available as printed books or as master e-versions.

- ☐ Career Pathways 2ed
- ☐ Work Placement Journal & Work Experience Journal
- ☐ Personal Development Activity Planner: Foundation; Personal Development Activity & Project Planner: Intermediate; and Personal Development Project Planner: Senior
- ☐ Community Services Foundation & Intermediate
- ☐ Retail Foundation & Retail Intermediate

For WACE Career and Enterprise; and very useful for any Workplace Learning program:

The full suite of WACE Career and Enterprise Resources (each with choice of e-version master):

- ☐ Career and Enterprise: Foundation 11
- ☐ Career and Enterprise: Foundation 12
- ☐ Career and Enterprise: CAE - General 11
- ☐ Career and Enterprise: CAE - General 12/ATAR11
- ☐ Career and Enterprise: ATAR 12

#### Current resource list: 2020 (\* = new)

##### VCAL and Applied Learning (Master sets also available)

- ⇒ \*Personal Development - Foundation Workbook/text 2ed & Activities booklet (2020)
- ⇒ \*Personal Development - Intermediate 4ed Workbook/text & Activities booklet (2020)
- ⇒ \*Personal Development- Senior 4ed Workbook/text & Activities booklet (2020)
- ⇒ \*Work Related Skills - Foundation Workbook/text 2ed & Activities booklet (2020)
- ⇒ \*Work Related Skills - Intermediate 4ed Workbook/text & Activities booklet (2020)
- ⇒ \*Work Related Skills - Senior 3ed Workbook/text & Activities booklet (2020)
- ⇒ Literacy - Foundation Workbook/text 2ed & Activities skills booklet. *Lit-Foundation also available as an e-version (2019)*
- ⇒ Literacy - Intermediate Workbook/text 4ed & Activities skills booklet. *Lit-Intermediate also available as an e-version (2019)*
- ⇒ Literacy - Senior Workbook/text 2ed & Activities skills booklet *Lit-Senior also available as an e-version (2019)*
- ⇒ Numeracy - Foundation Workbook/text 2ed & Skills Development Booklet (2019)
- ⇒ Numeracy - Intermediate Workbook/text 2ed (for units 1&2) & Activities booklet (2019)
- ⇒ Numeracy - Senior Workbook/text 2ed (for units 1&2)

& Activities booklet (2019)

##### Industry and Enterprise

- > I&E Unit 1: Workplace Participation 4ed (& e-version) (2019)
- > I&E 1&2: Towards an Enterprising You 5ed (2019)
- > I&E 3&4: Towards an Enterprising Australia 4ed (2019)

##### Career pathways, work education and personal development (PDF e-versions also available)

- > Career Pathways 2ed
- > Work Experience Journal
- > Work Placement Journal
- > \*Personal Development Activity Planner: Foundation (2020)
- > \*Personal Development Activity & Project Planner: Intermediate (2020)
- > \*Personal Development Project Planner: Senior (2020)

##### Industry-specific resources (PDF e-versions also available)

- > Community Services Foundation
- > Community Services Intermediate
- > Retail Foundation
- > Retail Intermediate

##### WACE Career and Enterprise (PDF e-versions also available)

- > Career and Enterprise General 11
- > Career and Enterprise General 12/ATAR 11
- > Career and Enterprise ATAR 12
- > Career and Enterprise Foundation 12
- > Career and Enterprise Foundation 11

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<b>WACE: Career and Enterprise</b>	<b>Printed text</b>	<b>e-version master</b>	<b>Total</b>
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Career and Enterprise Foundation 12 (2016)	_____ @ \$49.50	_____ @ \$595	_____
Career and Enterprise General 11 (2016)	_____ @ \$55	_____ @ \$660	_____
Career and Enterprise General 12/ATAR 11 (2016)	_____ @ \$59.50	_____ @ \$660	_____
Career and Enterprise ATAR 12 (Jan 2017)	_____ @ \$59.50	_____ @ \$770	_____

<b>Careers, Work Education &amp; Personal Development</b>	<b>Printed text</b>	<b>e-version master</b>	<b>Total</b>
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Work Experience Journal 2015	_____ @ \$22	_____ @ \$165	_____
Work Placement Journal 2015	_____ @ \$29.50	_____ @ \$220	_____
Personal Development Activity Planner: Foundation 2020	_____ @ \$29.50	_____ @ \$220	_____
Personal Development Activity/Project Planner: Intermediate 2020	_____ @ \$29.50	_____ @ \$220	_____
Personal Development Project Planner: Senior 2020	_____ @ \$29.50	_____ @ \$220	_____

<b>Industry-Specific Resources</b>	<b>Printed text</b>	<b>e-version master</b>	<b>Total</b>
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Retail - Intermediate 2014	_____ @ \$33	_____ @ \$165	_____
Community Services - Foundation 2015	_____ @ \$33	_____ @ \$165	_____
Community Services - Intermediate 2015	_____ @ \$33	_____ @ \$165	_____

<b>Industry and Enterprise (New editions 2019)</b>	<b>Printed text</b>	<b>e-version master</b>	<b>Total</b>
I&E Unit 1: Workplace Participation 4ed. 2019	_____ @ \$35	_____ @ \$550	_____
I&E Units 1&2: Towards an Enterprising You 5ed. 2019	_____ @ \$49.50	na	_____
I&E Units 3&4: Towards an Enterprising Australia 4ed. 2019	_____ @ \$66	na	_____

<b>VCAL/ Applied Learning Resource Sets</b>		<b>Printed text/workbook</b>	<b>Printed activities book</b>	<b>Master text/workbook</b>	<b>Master activities book</b>	<b>Combined master sets</b>	<b>or license with master e-version</b>
Literacy Foundation 2ed. 2019		_____ @ \$42.50	_____ @ \$27.50	_____ @ \$275	_____ @ \$99	or _____ @ \$330	or _____ @ \$440
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Literacy Senior 2ed. 2019		_____ @ \$42.50	_____ @ \$27.50	_____ @ \$275	_____ @ \$99	or _____ @ \$330	or _____ @ \$440
Numeracy Foundation 2ed. 2019		_____ @ \$49.50	_____ @ \$27.50	_____ @ \$275	_____ @ \$99	or _____ @ \$330	na
Numeracy Intermediate 2ed. 2019		_____ @ \$49.50	_____ @ \$27.50	_____ @ \$275	_____ @ \$99	or _____ @ \$330	na
Numeracy Senior 2ed. 2019		_____ @ \$49.50	_____ @ \$27.50	_____ @ \$275	_____ @ \$99	or _____ @ \$330	na
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<b>*PDS Senior 3ed.</b> (Updated 2020)		_____ @ \$42.50	_____ @ \$27.50	_____ @ \$275	_____ @ \$99	or _____ @ \$330	na
<b>*WRS Foundation 2ed.</b> (Updated 2020)		_____ @ \$42.50	_____ @ \$27.50	_____ @ \$275	_____ @ \$99	or _____ @ \$330	na
<b>*WRS Intermediate 4ed.</b> (Updated 2020)		_____ @ \$42.50	_____ @ \$27.50	_____ @ \$275	_____ @ \$99	or _____ @ \$330	na
<b>*WRS Senior 3ed.</b> (Updated 2020)		_____ @ \$42.50	_____ @ \$27.50	_____ @ \$275	_____ @ \$99	or _____ @ \$330	na
<b>Totals</b>		_____	_____	_____	_____	_____	_____

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## Topic Completion Record

Topic	Skills Development			Advanced			Applied		
	Done?	Date	p.	Done?	Date	p.	Done?	Date	p.
1 Addition	<input type="checkbox"/>	<input type="text"/>	2	<input type="checkbox"/>	<input type="text"/>	3	<input type="checkbox"/>	<input type="text"/>	3
2 Subtraction	<input type="checkbox"/>	<input type="text"/>	4	<input type="checkbox"/>	<input type="text"/>	5	<input type="checkbox"/>	<input type="text"/>	5
3 Addition and Subtraction	<input type="checkbox"/>	<input type="text"/>	6	<input type="checkbox"/>	<input type="text"/>	7	<input type="checkbox"/>	<input type="text"/>	8-9
4 Percentages and Fractions	<input type="checkbox"/>	<input type="text"/>	10	<input type="checkbox"/>	<input type="text"/>	11	<input type="checkbox"/>	<input type="text"/>	11
5 Estimating	<input type="checkbox"/>	<input type="text"/>	12	<input type="checkbox"/>	<input type="text"/>	13	<input type="checkbox"/>	<input type="text"/>	13
6 Multiplication	<input type="checkbox"/>	<input type="text"/>	14	<input type="checkbox"/>	<input type="text"/>	15	<input type="checkbox"/>	<input type="text"/>	15
7 Division	<input type="checkbox"/>	<input type="text"/>	16	<input type="checkbox"/>	<input type="text"/>	17	<input type="checkbox"/>	<input type="text"/>	17
8 Multiplication and Division	<input type="checkbox"/>	<input type="text"/>	18	<input type="checkbox"/>	<input type="text"/>	19	<input type="checkbox"/>	<input type="text"/>	20-21
9 Data and Information	<input type="checkbox"/>	<input type="text"/>	22	<input type="checkbox"/>	<input type="text"/>	22	<input type="checkbox"/>	<input type="text"/>	23
10 Bar Graphs	<input type="checkbox"/>	<input type="text"/>	24	<input type="checkbox"/>	<input type="text"/>	25	<input type="checkbox"/>	<input type="text"/>	25
11 Pie Charts	<input type="checkbox"/>	<input type="text"/>	26	<input type="checkbox"/>	<input type="text"/>	27	<input type="checkbox"/>	<input type="text"/>	27
12 Money	<input type="checkbox"/>	<input type="text"/>	28	<input type="checkbox"/>	<input type="text"/>	29	<input type="checkbox"/>	<input type="text"/>	29

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## Topic Completion Record

Topic	Skills Development			Advanced			Applied		
	Done?	Date	p.	Done?	Date	p.	Done?	Date	p.
13 Making Change	<input type="text"/>	<input type="text"/>	30	<input type="text"/>	<input type="text"/>	31	<input type="text"/>	<input type="text"/>	31
14 Line Graphs	<input type="text"/>	<input type="text"/>	32	<input type="text"/>	<input type="text"/>	33	<input type="text"/>	<input type="text"/>	33
15 Order of Operations	<input type="text"/>	<input type="text"/>	34	<input type="text"/>	<input type="text"/>	35	<input type="text"/>	<input type="text"/>	35
16 Budgets	<input type="text"/>	<input type="text"/>	36	<input type="text"/>	<input type="text"/>	37	<input type="text"/>	<input type="text"/>	37
17 Time	<input type="text"/>	<input type="text"/>	38	<input type="text"/>	<input type="text"/>	39	<input type="text"/>	<input type="text"/>	39
18 Calculating Time	<input type="text"/>	<input type="text"/>	40	<input type="text"/>	<input type="text"/>	41	<input type="text"/>	<input type="text"/>	41
19 Directions and Location	<input type="text"/>	<input type="text"/>	42	<input type="text"/>	<input type="text"/>	43	<input type="text"/>	<input type="text"/>	43
20 Length and Distance	<input type="text"/>	<input type="text"/>	44	<input type="text"/>	<input type="text"/>	45	<input type="text"/>	<input type="text"/>	45
21 Measurements	<input type="text"/>	<input type="text"/>	46	<input type="text"/>	<input type="text"/>	47	<input type="text"/>	<input type="text"/>	47
22 Mass (Weight)	<input type="text"/>	<input type="text"/>	48	<input type="text"/>	<input type="text"/>	49	<input type="text"/>	<input type="text"/>	49
23 Capacity	<input type="text"/>	<input type="text"/>	50	<input type="text"/>	<input type="text"/>	51	<input type="text"/>	<input type="text"/>	51
24 Rosters and Timesheets	<input type="text"/>	<input type="text"/>	52	<input type="text"/>	<input type="text"/>	53	<input type="text"/>	<input type="text"/>	53

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## 1 Addition

### i. Skills Development

Complete the following **addition** calculations to build your skills. Make sure that you show appropriate workings out.

a. $6 + 27 =$	b. $14 + 9 =$	c. $\begin{array}{r} 6 \\ + 42 \\ \hline \end{array}$	d. $\begin{array}{r} 5 \\ + 42 \\ \hline \end{array}$
e. $24 + 68 =$	f. $54 + 93 =$	g. $\begin{array}{r} 13 \\ + 55 \\ \hline \end{array}$	h. $\begin{array}{r} 25 \\ + 85 \\ \hline \end{array}$
i. $19 + 97 =$	j. $36 + 147 =$	k. $\begin{array}{r} 10 \\ + 155 \\ \hline \end{array}$	l. $\begin{array}{r} 25 \\ + 185 \\ \hline \end{array}$
m. $7 + 9 + 6 =$	n. $27 + 38 + 52 =$	o. $\begin{array}{r} 16 \\ 25 \\ + 42 \\ \hline \end{array}$	p. $\begin{array}{r} 9 \\ 34 \\ + 64 \\ \hline \end{array}$
q. $4 + 22 + 146 =$	r. $11 + 44 + 146 =$	s. $\begin{array}{r} 5 \\ 30 \\ + 110 \\ \hline \end{array}$	t. $\begin{array}{r} 6 \\ 42 \\ + 150 \\ \hline \end{array}$
u. $5 + 65 + 123 + 9 =$	v. $15 + 55 + 138 + 2 =$	w. $\begin{array}{r} 72 \\ 56 \\ 4 \\ + 11 \\ \hline \end{array}$	x. $\begin{array}{r} 21 \\ 8 \\ 114 \\ + 30 \\ \hline \end{array}$

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ii. Advanced

Calculate the following **addition** problems and show your working out for each.

a. $8 + 9 + 7 + 6 + 16 + 25 =$	b. $22 + 33 + 55 + 44 + 77 =$	c. $4 + 1.5 + 27 + 2.5 =$
d. 57 cars on lot A, 34 on Lot B, 117 on Lot C. Total cars?	e. 27kg of potatoes, 5kg onions, 50kg snags and 15kg burgers. How many kgs?	f. A family gathering has 4 families with 19, 24, 31 & 17 members respectively. How many people?
g. Add 60 20 times to 100 =	h. 2 birds fly in one flock and twice as many in another. How many birds in total?	i. $1 + 10 + 100 + 1,000 + 10,000 + 100,000 + 1,000,000 =$

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iii. Applied

a. Johan is trying to monitor his fitness but he can't afford a FitBit. He walked 12,000 steps on Monday, 7,500 on Tuesday, 4,250 on Wednesday, 14,000 across Thursday and Friday, 1,000 on Saturday and 17,250 on Sunday. How many steps did Johan walk in that week?

b. Lindsie is at work in the bakery and the first customer buys 12 bread rolls, the second 24 bread rolls, the third (a café) buys 100 rolls and the next 4 customers buy 6 bread rolls each. The final customer buys 2 dozen bread rolls. How many bread rolls in total did Lindise sell?

## 2 Subtraction

### i. Skills Development

Complete the following **subtraction** calculations to build your skills. Make sure that you show appropriate workings out.

a. $26 - 7 =$	b. $84 - 9 =$	c. $\begin{array}{r} 46 \\ - 2 \\ \hline \end{array}$	d. $\begin{array}{r} 55 \\ - 9 \\ \hline \end{array}$
e. $94 - 68 =$	f. $94 - 53 =$	g. $\begin{array}{r} 53 \\ - 15 \\ \hline \end{array}$	h. $\begin{array}{r} 85 \\ - 25 \\ \hline \end{array}$
i. $89 - 47 =$	j. $136 - 47 =$	k. $\begin{array}{r} 110 \\ - 55 \\ \hline \end{array}$	l. $\begin{array}{r} 125 \\ - 85 \\ \hline \end{array}$
m. $17 - 9 - 3 =$	n. $87 - 36 - 12 =$	o. $\begin{array}{r} 76 \\ 25 \\ - 11 \\ \hline \end{array}$	p. $\begin{array}{r} 99 \\ 64 \\ - 24 \\ \hline \end{array}$
q. $144 - 22 - 6 =$	r. $146 - 46 - 50 =$	s. $\begin{array}{r} 100 \\ 30 \\ - 10 \\ \hline \end{array}$	t. $\begin{array}{r} 150 \\ 42 \\ - 9 \\ \hline \end{array}$
u. $155 - 65 - 23 - 9 =$	v. $138 - 55 - 38 - 2 =$	w. $\begin{array}{r} 72 \\ 56 \\ 4 \\ - 11 \\ \hline \end{array}$	x. $\begin{array}{r} 121 \\ 8 \\ 14 \\ - 30 \\ \hline \end{array}$

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## ii. Advanced

Calculate the following **subtraction** problems and show your working out for each.

a. $88 - 9 - 7 - 6 - 16 - 25 =$	b. $222 - 33 - 55 - 44 - 77 =$	c. $14 - 1.5 - 7 - 2.5 =$
d. 150 cars in car park. 27 leave in hour 1, 36 in hour 2 and 74 in hour 3. How many cars remaining?	e. Janez has made 100 tarts for the party. Ben eats 12, Lola 16, Cram 24 and Pixi 5. How many tarts left?	f. Gilbertina is making sausage rolls. Each 20 requires 1.5kg of mince. After starting with 10kg of mince how much is left after making 100?

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## iii. Applied

- a. Markie is out shopping and has \$1,000 in his bank. He spends \$250 on a suit, \$75 on a new pair of boots, \$200 on a new power saw and buys 3 iTunes cards at \$20 each. After spending \$200 on lunch how much does he have left?

- b. My is doing a 5-day 600 km cycling training program. On day 1 she cycles 120 km, day 2: 73 km, day 3: 106 km and day 4: 175 km. How many kilometres does she need to cycle on day 5 to reach her target?

### 3 Addition and Subtraction

#### i. Skills Development

Complete the following **addition and subtraction** calculations to build your skills. Make sure that you show appropriate workings out.

a. $7 + 19 - 16 =$	b. $57 + 32 - 29 =$	c. $11 + 17 + 25 - 16 =$
d. $81 + 125 - 52 =$	e. $57 - 44 + 114 =$	f. $\begin{array}{r} 26 \\ + 25 \\ - 42 \\ \hline \end{array}$
g. $35 + 86 - 16 - 4 =$	h. $10 + 20 + 30 - 20 - 10 =$	i. $\begin{array}{r} 50 \\ - 25 \\ + 30 \\ \hline \end{array}$
j. $9 + 9 + 4 + 6 + 9 - 5 - 6 =$	k. $32 + 56 - 24 + 81 =$	l. $\begin{array}{r} 11 \\ + 124 \\ - 10 \\ - 50 \\ \hline \end{array}$
m. $17 + 15 - 9 - 8 - 2 - 5 =$	n. $158 + 252 - 70 =$	o. $52 - 57 + 105 - 18 =$
p. $1000 + 2000 - 500 =$	q. $500 - 250 + 1250 - 750 =$	r. $70 - 20 - 25 - 35 =$

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## ii. Advanced

Calculate the following **addition and subtraction** problems and show your working out for each.

a. $2.5 + 27 + 6.5 - 12.25 =$	b. $150 - 25 - 12.5 + 6 + 800 =$	c. $11 - 14 + 1000 + 250 - 9 =$
d. $4,500 - 3,750 + 9,995 - 6,125 =$	e. $56,000 + 96,000 - 36,000 =$	f. $8,000 + 1,000 - 900 - 6,500 =$
g. $17,000 + 5,250 + 6,700 - 4,100 =$	h. $742,000 + 257,000 - 82,000 - 25,000 =$	i. $1,450,000 - 250,000 + 750,000 - 90,000 =$
j. $7.1 - 4.6 + 5.8 - 2.1 + 3.8 - 2.7 =$	k. 1000kg plus 40kg add another 2000kg then take away 725kg =	l. 1 million plus a 100 million minus 10 million =

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### 3 Addition and Subtraction

#### iii. Applied

- a. You start out with \$100. You earn \$75 next week and spend \$50. You earn \$150 the week after and spend \$160. You earn \$200 the week after that and spend \$175. Finally you earn nothing in the final week but still spend \$57. What amount do you have left?

What are you going to have to do if you stop earning money? Why?

# Preview

Explain a tool that can help you keep track of your ongoing personal income and spending.

# Draft Sample: Do Not

- b. Cal is working the fryers at the Fish n' Chippery. He fries up 2kg of chips to get started. 10 customers each buy 250g of chips. In the meantime Cal has fried another batch of 2kg. 5 more customers each buy a 250g serve. How much chips are left?

Estimate how much you think the total chips might have sold for.

c. A shop starts with the following stock.

- |                            |                              |                         |
|----------------------------|------------------------------|-------------------------|
| • <i>Chocolate bars</i> 20 | • <i>Chips</i> 60            | • <i>Health bars</i> 12 |
| • <i>Drinks</i> 50         | • <i>Packs of jellies</i> 15 | • <i>Gum</i> 35         |

At the end of the week it has these amounts of stock left.

- |                           |                             |                        |
|---------------------------|-----------------------------|------------------------|
| • <i>Chocolate bars</i> 5 | • <i>Chips</i> 6            | • <i>Health bars</i> 1 |
| • <i>Drinks</i> 12        | • <i>Packs of jellies</i> 9 | • <i>Gum</i> 7         |

Based on these numbers, how many of each item did it sell?

How many items did it sell in total?

A competitor shop sells the same items. At the start of the week it starts with the same amounts of stock. However, at the end of the week these are the totals.

- |                            |                              |                        |
|----------------------------|------------------------------|------------------------|
| • <i>Chocolate bars</i> 14 | • <i>Chips</i> 12            | • <i>Health bars</i> 4 |
| • <i>Drinks</i> 6          | • <i>Packs of jellies</i> 12 | • <i>Gum</i> 0         |

So based on those numbers, how many of each item did the competitor sell, and how many items did it sell in total?


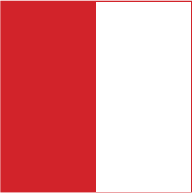
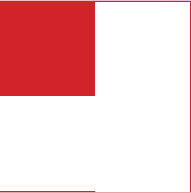
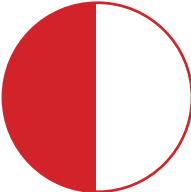

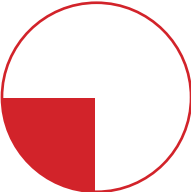
Which shop do you think is doing better? Explain the reasons for your answer.

d. If you climb 20 metres up a steep slippery hill every minute, but slip back 5 metres each time, how far up the hill will you have climbed after 10 minutes?

## 4 Percentages and Fractions

### i. Skills Development

- a. Write each of the following as a **fraction**, a **decimal** and a **percentage**. For the images write these for both the red (shaded) and white portions.

a. 	b. 	c. 
d. 	e. 	f. 
g. a half	h. a quarter	i. a third
j. two thirds	k. three quarters	l. seven eighths

Preview  
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- b. Write each of the following fractions as a **decimal** and as a **percentage**.

a. $\frac{1}{10}$	b. $\frac{3}{10}$	c. $\frac{2}{3}$	d. $\frac{9}{10}$
e. $\frac{5}{100}$	f. $\frac{1}{20}$	g. $\frac{3}{4}$	h. $\frac{7}{20}$

## ii. Advanced

Calculate the following based on **percentages**, **decimals** and **fractions**.

a. $\frac{1}{2} + \frac{1}{2} =$	b. $\frac{1}{4} + \frac{1}{4} =$	c. $\frac{1}{3} + \frac{1}{2} =$	d. $\frac{1}{8} + \frac{1}{2} + \frac{1}{8} =$
e. $\frac{1}{2} + 0.5 =$	f. $0.25 + \frac{1}{2} =$	g. $0.1 + 0.3 + \frac{1}{2} =$	h. $0.6 + \frac{1}{2} - 0.1 =$
i. $\frac{1}{2} - \frac{1}{4} =$	j. $0.9 - 0.6 =$	k. $1.5 + 2.7 - 1.2 =$	l. $0.3 + \frac{1}{2} - 0.2 + 0.8 =$
m. 10% of 100 =	n. 10% of 100 =	o. 5% of 100 =	p. 40% of 500 =
q. 25% of 250 =	r. 75% of 10,000 =	s. 80% of 160 =	t. 50% of 350 =

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## iii. Applied

Klem likes Skittles. She counts out 100 and will eat these evenly over the next 4 days. What fraction, decimal and percentage will she eat per day?

Harry likes fried chips. He buys 2kg and wants to share these evenly with 7 friends. What fraction, decimal and percentage is to be shared between them all? What would be the weight of each shared portion?

## 5 Estimating

### i. Skills Development

Complete the following **estimates**. Then do some research and/or calculations to check the accuracy of these.

a. How long would it take you to walk to school?	b. How far away is the nearest fish'n'chip shop from you?	c. How long is a plane trip from Melbourne to Perth?
d. What weight of food would you consume in a day?	e. How much does your family spend on electricity a year?	f. How many SMS messages do you send a day?
g. How many kilometres does your family vehicle travel in a week?	h. How much does your family's car weigh?	i. How long do you take to have a shower?
j. How many tiles are on a normal sized tiled house roof?	k. How much income are you likely to earn in your lifetime?	l. How many items of outer clothing do you own?
m. How much soft drink do you consume in a week?	n. How many hours a 'day' do you spend asleep?	o. What is the temperature in this room right now?

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ii. Advanced

Complete the following **estimates**. Then do some research and/or calculations to check the accuracy of these.

a. Total height of your class members?	b. Total burgers your local Hungry Jacks or McDonald's sells in a day?	c. Total time it would take to mow the MCG?
d. Total weight of an NRL team?	e. Total cars that travel down your street per day?	f. Total wealth of Australia's 5 richest people?

**Preview  
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iii. Applied

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- a. How much income do you think you'll earn in your first year of full-time work? Show your calculations to get this estimate.

- b. Think of a child at the age of 5. What height do you think they would be? Research or make measurements to assess your estimates. How about you - what height were you at aged 5?

## 6 Multiplication

### i. Skills Development

Complete the following **multiplication** calculations to build your skills. Make sure that you show appropriate workings out.

a. $5 \times 7 =$	b. $4 * 15 =$	c. $\begin{array}{r} 6 \\ \times 25 \\ \hline \end{array}$
d. $9 * 8 =$	e. $11 \times 15 =$	f. $\begin{array}{r} 12 \\ \times 20 \\ \hline \end{array}$
g. $23 * 7 =$	h. $50 \text{ times } 40 =$	i. $\begin{array}{r} 37 \\ \times 30 \\ \hline \end{array}$
j. $5 \times 6 \times 11 =$	k. $9 * 4 * 10 =$	l. $\begin{array}{r} 8 \\ 9 \\ \times 5 \\ \hline \end{array}$
m. $60 * 2 * 4 * 2 =$	n. $23 \times 2 \times 4 \times 16 =$	o. $\begin{array}{r} 10 \\ 9 \\ 6 \\ \times 5 \\ \hline \end{array}$
p. $17 \text{ times } 5 * 2 \text{ by } 4 =$	q. $20 \times \frac{1}{2} =$	r. $\begin{array}{r} 25 \\ 2 \\ 15 \\ \times 10 \\ \hline \end{array}$

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ii. Advanced

Calculate the following **multiplication** problems; show your working out for each.

a. $278 * 30 =$	b. $100 \times 40 \times 12 =$	c. $70 * (15 \times 26) * 14 =$
d. $10 \times 1,000 \times 50 \times 20 =$	e. $11 \times 77 \times 66 \times 88 =$	f. $15 * 10(-2) =$
g. A person runs 5 km per day, 3 times a week. Total km?	h. 6 people each pay fees of \$25. They do this for 50 weeks. Total?	i. A cat runs up and down 15 stairs 50 times a day. How many stairs in a fortnight?

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iii. Applied

a. Allain buys a can of Coke everyday. How much does Allain spend per week and for the year?

b. Jiminy drives 15km each weekday and 100km on each weekend. How many km per week and per year? (What about per month?)

## 7 Division

### i. Skills Development

Complete the following **division** calculations to build your skills. Make sure that you show appropriate workings out.

a. $12 \div 4 =$	b. $80 \div 8 =$	c. $80 \div 10 =$
d. $77 \div 11 =$	e. $120 \div 5 =$	f. $200 / 25 =$
g. $80 \div 2 / 10 =$	h. $120 \div 10 \div 4 =$	i. $1000 / 25 \div 4 =$
j. $180 / 10 \div 9 =$	k. $2000 \div 50 \div 4 =$	l. $144 \div 2 \div 2 / 2 =$
m. 120 divided by 12 =	n. 80 how many 2s =	o. 10 into 1500 =
p. $83 / 4 =$	q. $99 / 11 \div 2 =$	r. $(660 \div 60) / 2 =$

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ii. Advanced

Calculate the following **division** problems and show your working out for each.

a. $390 \times 10 / 3 =$	b. $8888 / 8 / 11 =$	c. $15 \div 2 \div 3 =$
d. $1000 / 50 / 10 / 2 =$	e. $1 \text{ million} \div 10,000 =$	f. $30 \div 5(-3) =$
g. A bulk purchase of apples weighs 20kg. Each apple weighs about 100 g. How many apples?	h. Have to share seven 8-slice pizzas between 14 students. How many slices each?	i. Table for 8 has a bill of \$270. How much will each diner pay if they split the bill evenly?

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iii. Applied

a. Lenny has to unload a shipment of second-hand bricks from the truck. There's a thousand bricks and his hand trolley can do 8 at a time. How many 'loads' for Lenny?

b. Aunt Samee wants to give each of her nieces and nephews a share of \$5,000. It's a big family and there are 26 of them. She reckons \$200 each sounds right. What do you think?

## 8 Multiplication and Division

### i. Skills Development

Complete the following **multiplication and division** calculations to build your skills. Make sure that you show appropriate workings out.

a. $5 * 10 / 25 =$	b. $100 \div 25 * 6 =$	c. $15 \times 5 \div 5 =$
d. $12 \times 10 \div 5 =$	e. $50 / 5 * 100 =$	f. $100 * 10 / 20 =$
g. $60 * 10 \div 1 =$	h. $75 * 10 / 5 =$	i. $100 \div 50 * 25 =$
j. $12 / 6 * 40 =$	k. $9 * 9 \times 8 \div 2 =$	l. $(10 * 50) \div (5 * 4) =$
m. 80 by 20 divided by 40 =	n. 100 by 15 divided by 5 =	o. 80 divided by 40 times 20 =

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## ii. Advanced

Calculate the following **multiplication and division** problems and show your working out for each.

a. $215 \times 5 \div 10 =$	b. $60 \times 20 \times 17 \div 20 =$	c. $50 \times 25 \times 17 \div 20 =$
d. $80 \div 8 \times 72 \times 45 =$	e. $19 * 18 \div (2 \times 100) =$	f. $62 * 10 \div 4 \div 2 =$
g. A hundred divided by 5 times 76 =	h. 1 million divided by 100 times 50 =	i. $44 \div 4 \div 5.5 \times 30 =$
j. Worked 20 hours @ \$12/hour for 5 days. Divided by 2 workers.	k. Job requires 200 hours for each of 4 workers. Each worker paid \$20. Total \$ and \$/per worker?	l. Ate 2 hamburgers a day for 28 days. Total burgers, and how many burgers per week?

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## 8 Multiplication and Division

### iii. Applied

- a. Ceri has to buy timber to build a dog house. He needs 10 lengths of 2 metres each. But he can only buy timber in 4.2 metre lengths. How many metres will he need for the dog house? How many 4.2 m lengths of timber will he need to buy?

- b. Rohan wants to measure his consumption of fruit juice. He drinks 2 600ml bottles a day. He wants to know how many litres he drinks a week and how many millilitres he drinks a day.

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- c. You are the project manager for a team of 5 workers. Each worker works 12 hours on the project and each of these are paid \$12 per hour. How much is paid to the workers in total and how much does each worker earn for the project?

You are paid \$100 for each 15 hours worked by your team. How much do you earn?



When calculating a budget you normally plan on a per month basis and on a per week basis. This is because most people get paid weekly or fortnightly yet many bills are based on months. But 4 weeks doesn't = 1 month. That's why monthly rent is more than 4 weeks rent (i.e. you are paying monthly rent for a period lasting 4 weeks + 2 or 3 days as well). So it is important to be able to turn weekly payments in monthly payments and vice versa. This requires the use multiplication together with division. Complete the following calculations.

⇒ Weekly rent \$200. Annual amount? How much is monthly rent?

⇒ Weekly rent \$350. Annual amount? How much is monthly rent?

⇒ Weekly rent \$1,000. Annual amount? How much is monthly rent?

⇒ Weekly rent \$300 shared between 4 people. How much is each person's monthly rent? What about their annual rent?

⇒ Gas bill \$1,100 for 1 month. Approximate weekly amount?

⇒ Electricity bill \$240 for 3 months. Approximate weekly amount?

⇒ Rates \$3,000 per quarter. Weekly amount? Annual amount?

⇒ Mobile plan \$50 per month. Approximate weekly amount? Annual amount?

⇒ Car rego \$900 for 12 months. Monthly amount? Weekly amount?

⇒ Weekly wage \$1,000. Annual wage? How much is the monthly wage?

⇒ Monthly salary \$5,000. Annual salary? How much is the weekly salary?

⇒ Annual wage \$26,000. Monthly amount? How much is weekly wage?

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## 9 Data and Information

### i. Skills Development

a. Put the following data in a **table** and arrange by **alphabetical order** of name.

- ⇒ Ethel: 24, 173cm, cat, iPhone, red, steak, Falcon.
- ⇒ Clarry: 74, 162cm, dog, landline, light blue, liver, Camry.
- ⇒ Cecil: 18, 193cm, snake, Samsung, green, chicken, Mini.
- ⇒ Daphne: 44, 154cm, rat, Nokia, purple, tofu, Valiant.

Peoples' data and information							
Person	Age	Height	Pet	Phone	Colour	Food	Car

b. Complete the missing amounts for the following data.

Kilometre runs - Sep 2020				Customer purchases - 2020				
Person	Runs	Total km	Average	Customer	Purchases	\$	Total	Average
Frank	7	28		John	10	40		
Frankie	20	80		Jack	7	35		
Francis	30	60		Jackie	18	50		
Frances	14	49		John	7	150		
Francine	6	39		Jonni	19	40		
Totals				Totals				

Hours worked - July to November 2020					
Month	Hours	Shifts	Hrs/Shift	Pay	Total pay
July	32	8		\$12	
August	24	6		\$12	
September	48	12		\$12	
October	64	16		\$12	
November	80	20		\$14	
<b>Totals</b>					

## ii. Advanced

The following data has been incorrectly inputted into the table. Fill out the blank table correctly in alphabetical order.

- ⇒ Mack worked 16 hours, at a rate of \$12.
- ⇒ Jen worked 20 hours at a rate of \$18/hour.
- ⇒ Vick worked 30 hours at a rate of \$20 hour.
- ⇒ Ngoc worked 38 hours at a rate of \$15/hour.
- ⇒ Lil worked 25 hours at a rate of \$35/hour.
- ⇒ Stan worked 2 shifts of 6 hours at a rate of \$15/hour.

Employee pay table - Oct 12-18, 2019			
Worker	Hours	Rate \$	Total
Mack	16	10	\$160
Jen	20	18	\$340
Nick	30	20	\$600
Ngoc	40	15	\$570
Stan	26	25	\$650
Lil	25	15	\$375
<b>Totals</b>	<b>133</b>		<b>\$2575</b>

Employee pay table - Oct 12-18, 2019			
Worker	Hours	Rate \$	Total
<b>Totals</b>			

## iii. Applied

Survey 5 class members using the categories shown in question i a. on p.22.

- ⇒ Complete a table to show the data you collected.

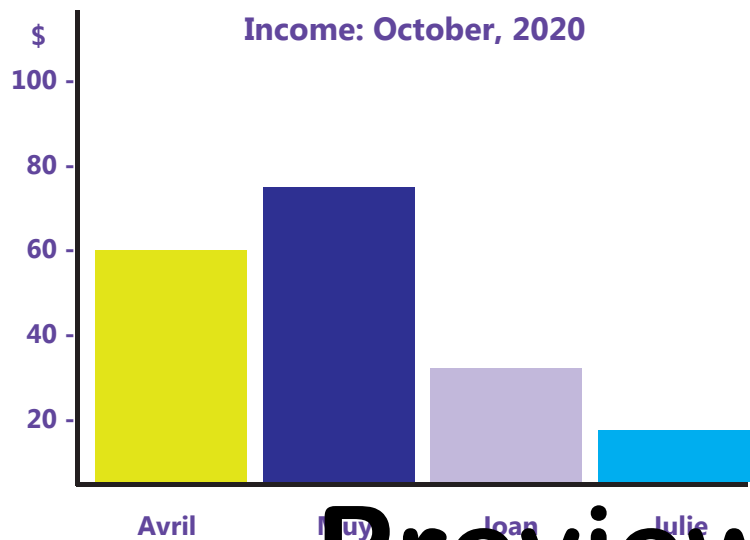
Peoples' data and information							
Person	Age	Height	Pet	Phone	Colour	Food	Car

- ⇒ Comment on any patterns in the data.

10 Bar Graphs

i. Skills Development

- a. Complete this **table** based on the information from the **bar graph**.



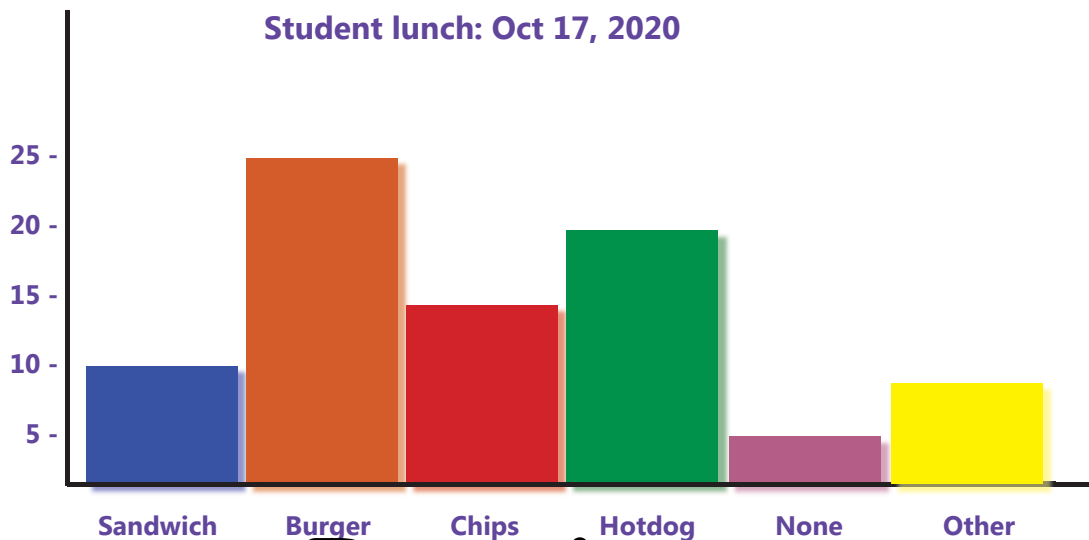
Income - October 2020	
Person	Total
Avril	
	\$75
Joan	
Julie	

- b. Complete a properly labeled **bar graph** to show the number of purchases for each customer in 2020.

Customer purchases - 2020			
Customer	Purchases	\$	Total
Jonni	20	40	\$800
Ronni	9	35	\$243
Vonni	12	50	\$600
Honni	10	75	\$750
Binni	4	40	\$160

ii. Advanced & iii. Applied

- a. Use the **information** shown on the **bar graph** to comment on whether each of the following statements is true or false. Give reasons for your answer.



⇒ Burger was the most common lunch choice for students.

⇒ 20 students had a sandwich for lunch.

⇒ More students ate hotdogs for lunch than chips.

⇒ About 3 students didn't have a lunch.

⇒ Students seem to be preferring healthier lunch options.

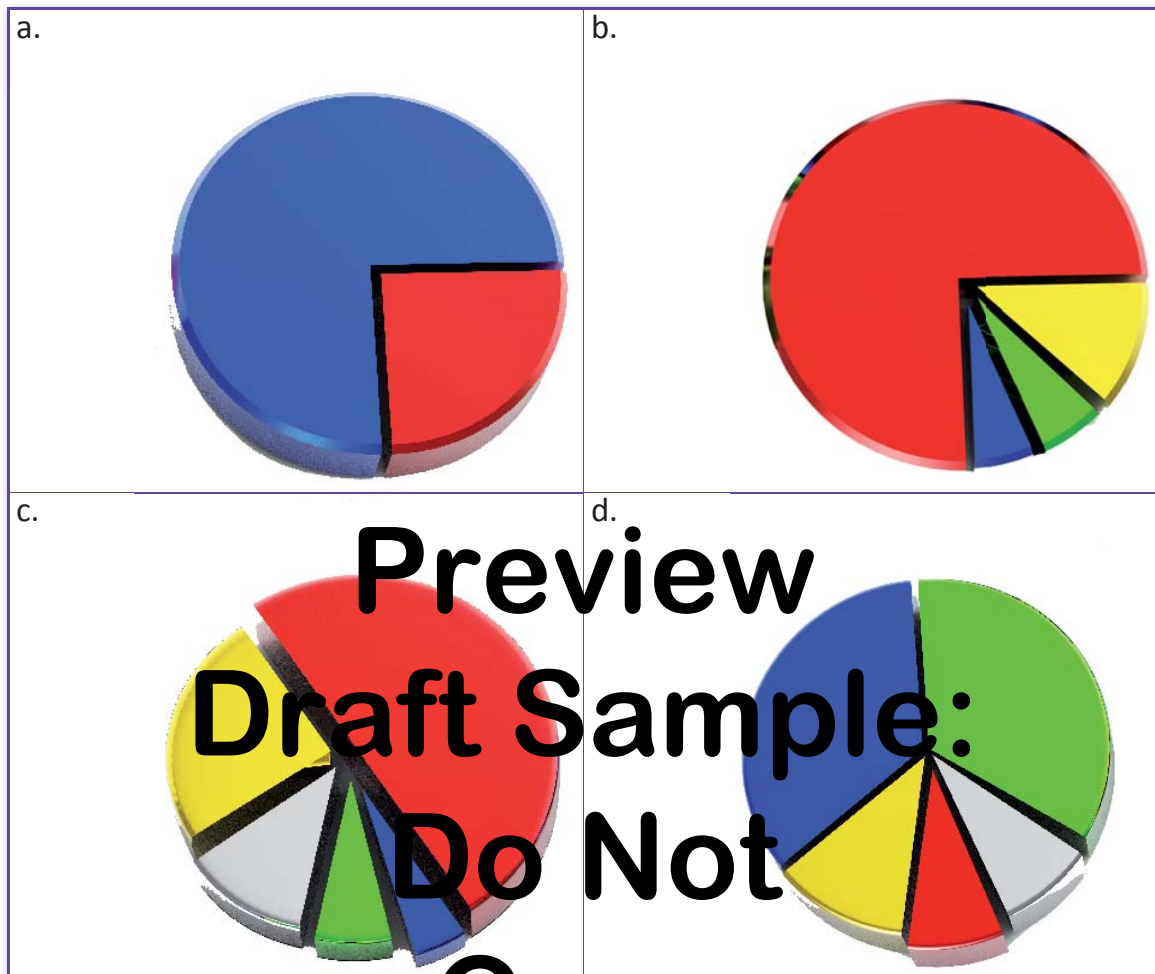
- b. Complete a bar graph for the same information based on a survey of students in your class. Write 5 clear statements that describe the data and information.

## 11 Pie Charts

### i. Skills Development

- a. Estimate the **percentage** (%) represented by each piece (or portion) of the pie for these pie charts.

Image: everything poss/  
Depositphotos.com



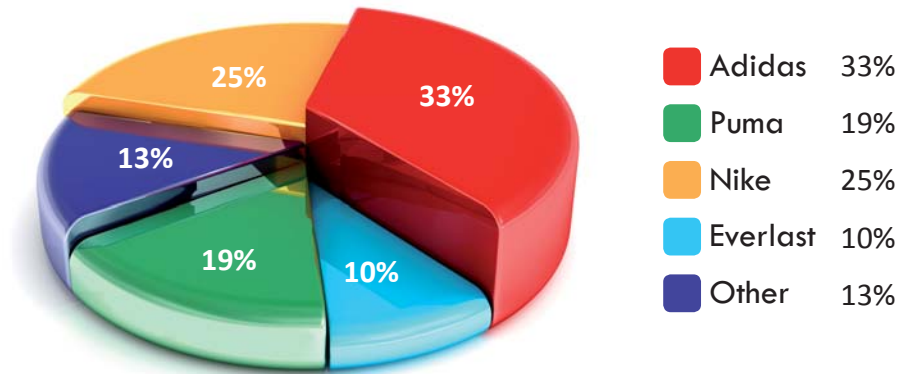
- b. Answer the following questions by identifying the **most likely** pie chart, together with a brief explanation of the reason for your choice.
- ⇒ Which pie chart is showing one single portion at 75% and 3 other portion as 25% combined?
  - ⇒ Which pie chart is showing one single portion at the same amount as the 4 other portions combined?
  - ⇒ Which pie chart shows 2 pieces equal to one another, 2 small pieces equal to each other and one piece slightly larger than those 2 smaller pieces?
  - ⇒ Which pie chart could be showing the responses to a yes/no survey? What might be the question?

## ii. Advanced & iii. Applied

- a. Use the **information** shown on the **pie chart** to comment on whether each of the following statements is true or false. Given reasons for your answer.

### Students' favourite sportswear brand: Oct 2020

Image:  
DmitryRukhlenko/  
Depositphotos.com



- ⇒ Adidas was the most popular sportswear brand for the students surveyed.

- ⇒ More than half preferred Adidas and Nike compared to other brands.

- ⇒ Added together, more students preferred Nike and Puma than Adidas.

- ⇒ About 20% of students preferred brands other than the 4 featured in the survey.

- ⇒ Everlast was the least popular of any brand.

- b. Complete a pie chart for the same information based on a survey of students in your class. Write 5 clear statements that describe the data and information.

## 12 Money

### i. Skills Development

Calculate each of these **money totals**. Make sure that you show appropriate workings out.

a. $\$2.50 + \$2 =$	b. $\$11 + \$4.50 =$	c. $\$7.45 + \$2.25 =$
d. $\$4 + \$2 + \$7 =$	e. $\$15 + \$25 + \$4.50 =$	f. $\$14 + \$99 + \$28.50 =$
g. $\$2.50 - \$2 =$	h. $\$11 - \$4.50 =$	i. $\$7.45 - \$2.25 =$
j. $\$12.50 - \$2 =$	k. $\$71 - \$20.50 =$	l. $\$127.90 - \$22.70 =$
m. $\$2.50 \times 6 =$	n. $\$12 \div 4 =$	o. $\$100 \times 40 =$
p. $\$112.50 + \$2 - \$75 =$	q. $\$1000 - \$500 + \$50 =$	r. $\$74 + \$74 - \$128 + \$1 =$

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ii. Advanced

Calculate the **money total** for each of these situations.

a. You spend \$7 every day. How much per week, per month and per year?	b. You save \$50 a week for 20 weeks and then \$60 a week for 15 weeks. Total savings?	c. A customer orders 20 cans at \$2.50, 30 loaves at \$3.50 and 10kg of veggie burgers at \$15/kg. Total price?
d. A client pays \$500 in fees for each of 4 jobs, and then \$750 in fees for each of 6 more jobs. Total fees?	e. A car yard has 12 cars at \$22,000, 7 cars @ \$18,000 and 15 cars @ \$15,000. It just sold one of the mid-priced cars. Total stock value?	f. After a day selling at the local swap meet, you have 15 x 20s, 6 x 10s, 5 x 5s, 7 x 2s, 12 x 1s and \$5.75 in silver. Total?

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iii. Applied

a. You go to buy dinner for the family. 2 Big Macs, 2 Quarter Pounders, 12 nuggets, 4 large fries, 3 large soft drinks, 1 shake and a Happy Meal. How much will this cost?

b. Cris has had a car for a month. Insurance \$700, rego \$900, new tyres \$375, sound system \$320 and petrol at \$1.50 a litre for 100 litres. Total Cris's vehicle costs for the month. Should some of these be averaged over a longer time period?

## 13 Making Change

### i. Skills Development

Calculate the **exact change** for each of these transactions. List the **currency units** you would use to make the change.

a. Purchase of \$7.50. Given \$10.	b. Purchase of \$12.50. Given \$20.	c. Purchase of \$24.75. Given \$50.
d. Purchase of \$63.75. Given \$100.	e. Purchase of \$2.20. Given \$10.	f. Purchase of \$12.95. Given \$20.
g. Purchase of \$22.75. Given 3 x \$10s.	h. Purchase of \$11.80. Given 5 x \$2s & 2 x \$1s.	i. Purchase of \$97.50. Given \$50 & 3 x \$20s.
j. Purchase of \$35. Given a \$20 & \$20.	k. Purchase of \$55.75. Given a \$50 & \$20.	l. Purchase of \$62.50. Given a \$50 & \$20
m. Purchase of \$75. Given a \$50 & \$20 & \$10	n. Purchase of \$159.95 Given a \$100 & \$50 & \$20.	o. Purchase of \$73.70 Given 4 x \$20s.

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## ii. Advanced

Calculate the **money total** for each of these situations. Make sure that you show appropriate workings out.

a. What change is left from \$100 after 6 purchases of \$16.60?	b. What change is left from \$100 after 12 purchases of \$5.50 and 3 of \$9.75?	c. What change is left from \$170 after 9 purchases of \$11, 5 of \$5, 3 of \$6 and 1 of \$20?
d. How much change do you give after diners split their \$450 bill 10 ways? Each pays with a fifty.	e. What change is left from \$20 after 8 purchases of \$1.20, 10 of \$0.50, 3 of 60c and 9 of 40c?	f. Customer is to be given change of \$17 but you haven't any notes left.
g. You buy 2 hotdogs at \$2.49 each. You don't get any change from \$5. Why not?	h. You have already spent \$4.15 of your \$5, so what's left? Can you get for your little brother from the milk bar?	i. Customer buys 2 pair of jeans at \$89.95. How much change from a \$200 note?

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## iii. Applied

You work as a casual at a hair salon and clients usually pay by card. But today the system is down. So you have to process the transactions manually and take cash. Here is the price list. *Cut \$35. Colour \$45. Style \$55. Set \$20. Trim \$25.*

Calculate each clients' total bill.

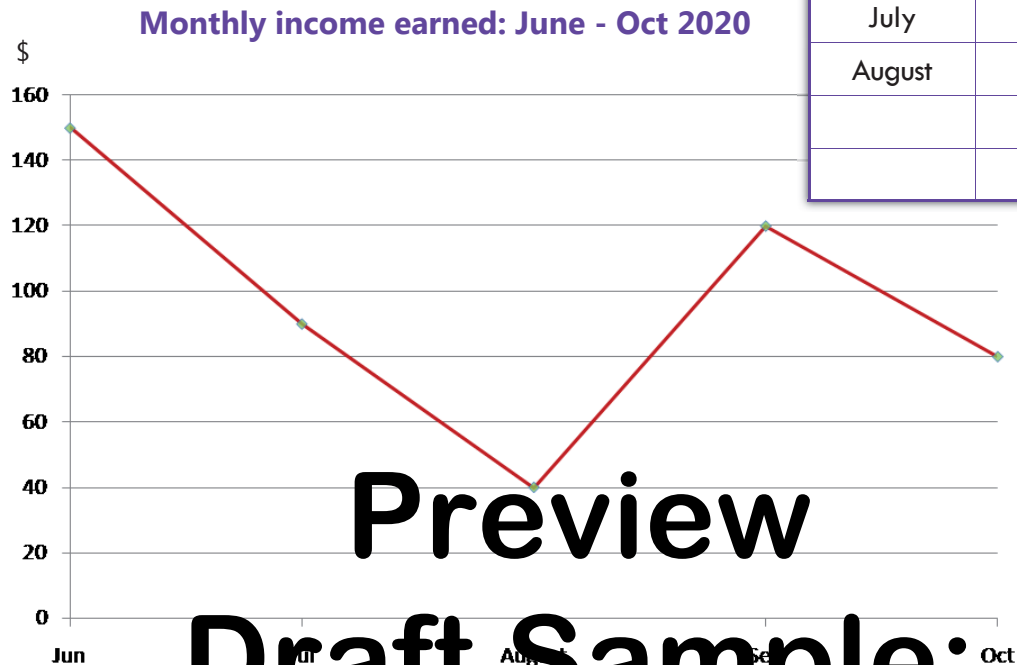
What (cash) currency units will you be expecting to receive when each pays.

- ⇒ Mina gets a cut, colour and set.
- ⇒ Gina gets a trim and set.
- ⇒ Lina gets a trim and style.
- ⇒ Pina gets a cut, style and set.
- ⇒ Tina gets a colour and set.
- ⇒ Xina gets trim, style and colour.

## 14 Line Graphs

### i. Skills Development

- a. Complete this **table** based on the information from the **line graph**.

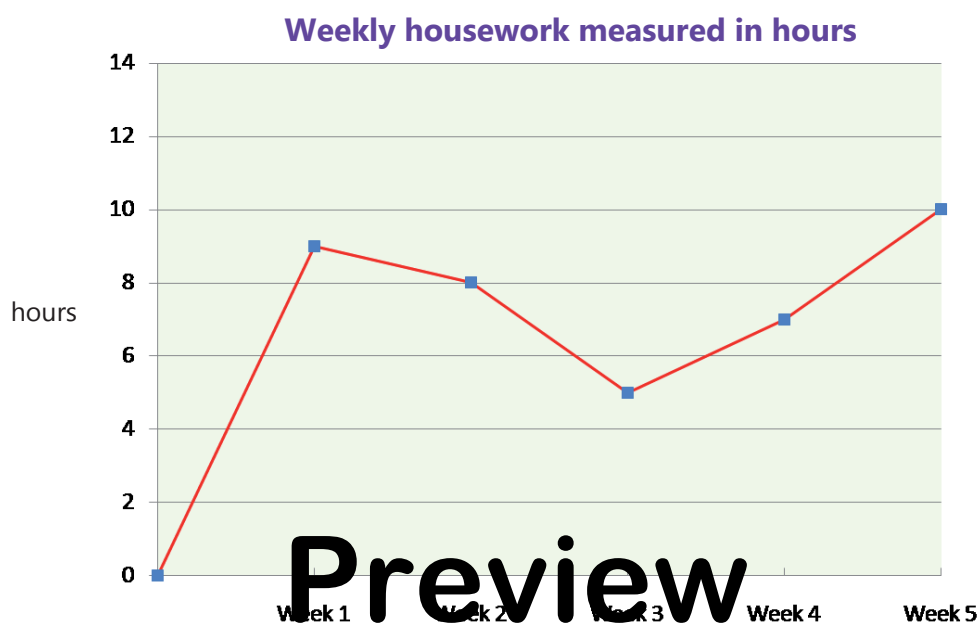


- b. Answer the following questions using the **information** from the **graph** shown above, *Monthly income earned June - Oct 2020*. Support your answer with evidence from the line graph.

- ⇒ In which month was the highest income amount earned?
- ⇒ In which month was the lowest income amount earned?
- ⇒ How much was earned by the worker over the 5 months?
- ⇒ How much was the difference between the lowest monthly amount and the highest?
- ⇒ Is the worker more or less likely to earn over \$100 per month?
- ⇒ What is the overall trend indicated by the graph?

## ii. Advanced &amp; iii. Applied

- a. Use the **information** shown on the **line graph** to comment on whether each of the following statements is true or false. Given reasons for your answer.



⇒ The most housework done was in Week 1.

⇒ The least housework done was in Week 4.

⇒ The overall trend for housework done is upwards.

⇒ About 40 hours housework was completed over the 5 weeks.

- b. Complete a line graph for similar information based on your own personal experiences. Write 4 clear statements that describe the data and information.

## 15 Order of Operations

### i. Skills Development

Complete each of these calculations using the correct **order of operations**. Make sure that you show appropriate workings out.

a. $5 \times 6 + 7 =$	b. $9 + 7 \times 4 =$	c. $10 \times 10 / 5 =$
d. $12 * 10 - 50 =$	e. $20 * 15 - 25 =$	f. $15 + 20 * 9 =$
g. $15 / 3 + 25 + 10 =$	h. $15 \times 3 + 25 + 10 =$	i. $15 + 3 + 25 \times 10 =$
j. $2 \times 6 + 14 \times 7 =$	k. $8 - 5 + 10 * 20 =$	l. $28 \times 5 + 12 \times 5 =$
m. $65 - (7 \times 8) - 2 =$	n. $10 + (70 \times 10) - 5 =$	o. $20 \times 20 - 20 \times 20 =$
p. $15 / 5 + (7 \times 20) \times 10 =$	q. $100 / 25 + (4 \times 10) \times 15 =$	r. $50 - 43 + (11 * 6) - 15 =$

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## ii. Advanced

Calculate the answers for each of these situations using the correct **order of operations**.

<p>a. You have 5 groups of 5 trainees, you add 5 more and then split them into 6 groups. How many per group?</p>	<p>b. You earn \$20 a day for a week, but spend \$100. You then earn another \$15 for 3 days running. How much do you have?</p>	<p>c. A customer buys 10 hats at \$20 each and 10 scarves at \$10 each. He wants to pay in 3 equal instalments.</p>
<p>d. 30 fish weigh 10kg in total. You take out the 5 biggest which removes 2kg. What is the average weight of those left?</p>	<p>e. Each outfit requires 2m of cloth + 1/2 metre for ties. How many metres for 5 outfits?</p>	<p>f. You have 1,000 M&amp;Ms for 10 people at the party. But an extra 2 people turn up. How many M&amp;Ms for each?</p>

## iii. Applied

You are ordering food for a party at the local cafe. You order 50 cupcakes at \$2 each, 75 sausage rolls at \$1 each and 25 tarts at \$5 each. You know you have to pay half the total as a deposit; so you have exactly \$150 cash for this.

The cashier is quite surly and enters the amounts in her calculator. "That will be \$1,000 in total and your deposit is \$500."

After you pick your jaw off the ground, you point out that the "calculator might be wrong" and ask if she can please re-check. (That's your PDS training coming in!)

She "hmmphs" loudly, rolls her eyes, and re-enters the numbers in her calculator almost pushing the buttons through the other side. "Look. Fifty times two, plus seventy-five, times one, plus twenty-five, times five, equals one thousand dollars! So, divided by two your deposit is five hundred dollars. Hurry up and pay please, there's customers waiting you know!"

But you have paid attention during **order of operations** and your teacher has guided you well. You did the calculations when budgeting for the party so you feel that you should be correct. What will you do to show her that you are correct?

16 Budgets

i. Skills Development

a. Calculate the following **budget results**.

a. Income: \$500 Expenses: \$400	b. Income: \$800 Expenses: \$400 + \$385	c. Income: \$1,500 Expenses: \$400 x 4
d. Income: \$50 x 20 Expenses: \$20 x 50	e. Income: \$573 Expenses: \$178 + \$322	f. Income: \$9m Expenses: \$4m + \$2.5m + \$1m + \$0.5m

b. Complete budgets based on the following information

a. 1-week budget Income: Wages \$500 Expenses: Rent \$200 Food \$90 Bills \$75 Petrol \$25 Other \$15	b. 4-week budget Income: Wages \$500 a week Expenses: Rent \$150 a week Food \$100 a fortnight Bills \$15 a week Travel \$25 a week Phone \$50 for 4 weeks Internet \$70 for 4 weeks Other \$40 a week
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## ii. Advanced

Use your numerical skills to answer each of these **budget-related** questions.

<p>a. If a budget is in deficit \$50 every week, what will be the total deficit for the year?</p>	<p>b. If revenue exceeds expenses by \$12 every fortnight how much will the budget be in surplus for the year?</p>	<p>c. If revenue is 10% more than expenses, and expenses are \$250 per month, then how much is revenue per month?</p>
<p>d. Wages = \$100 per week. Expenses \$220 per fortnight. What is the budget result for the year?</p>	<p>e. If a budget is expected to be a deficit of \$2,600 for the year, how much less needs to be spent per week to make it balance.</p>	<p>f. Is this correct? You should overestimate revenue because it's money in and underestimate expenses because that's money out.</p>

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## iii. Applied

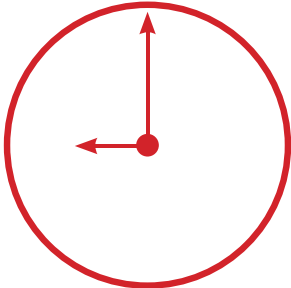
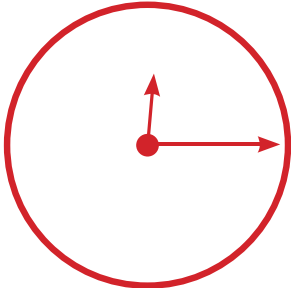
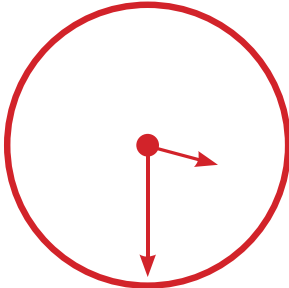
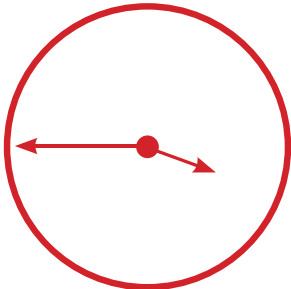

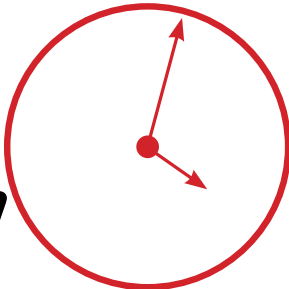
Preparing a budget is a great way to help you save for the future in order to reach a savings goal, such as saving up to buy an iPad, a new phone or a car.

- Prepare a budget that shows your current financial situation and your revenue and expenditure patterns.
- Estimate how much money you will need to save in order to buy your first motor vehicle (or some other longer-term savings goal). Also estimate how long that may take.
- Use your budget to forecast your likelihood of achieving this savings goal.
- Identify revenue and expenditure areas from your budget that you can change so as to better enable you to reach your savings goal.
- Re-calculate your budget reflecting these changes.
- Report on how much more likely you are now going to be able to reach your savings goal.

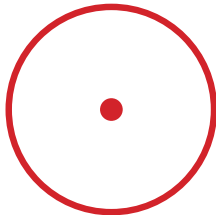

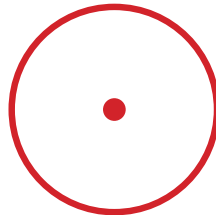

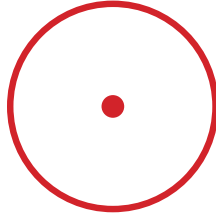
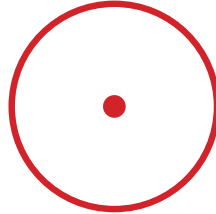
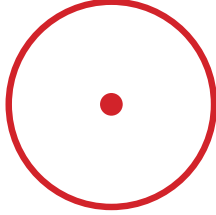
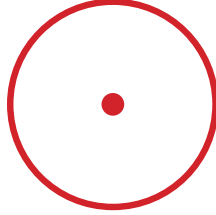
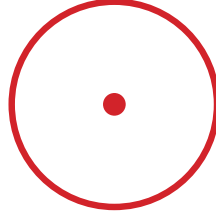
## 17 Time

### i. Skills Development

a. Show the **time** indicated by each of the analogue clockfaces.

a. 	b. 	c. 
d. 	e. 	f. 

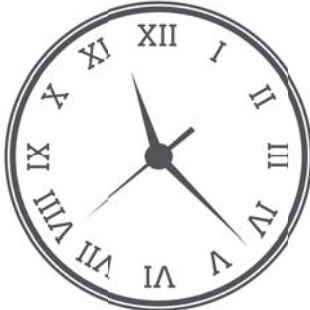
b. Indicate each of these times on an analogue clock face.

a. 4:00pm 	b. 4:00am 	c. 10:30 
d. 5:50 	e. 1:45 	f. 6:15 
g. 8:15 	h. 4:50 	i. 11:15 

## ii. Advanced

Write these **times** from the clockface using digital time (with am/pm) and using a 24-hour clock display.

a. morning



b. morning



c. day



d. night



e. morning



f. night



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Image: MSSA/  
Depositphotos.com

a.	b.	c.
d.	e.	f.

## iii. Applied

Your neighbour has booked a flight to LA. The flight time is 15:30. So when during the day is the plane leaving? What time would your neighbour have to leave to go to the airport? Think carefully about this.

## 18 Calculating Time

### i. Skills Development

Calculate how much **time has elapsed** for the following timespans. Make sure that you show appropriate workings out.

a. 7:30am to 11:30am	b. 7:45am to 11:15am	c. 5:15pm to 11:45pm
d. 5:00am to 3:00pm	e. 7am to 3:30pm	f. 11:15am to 9:30pm
g. 7:45am to 12:30pm	h. 5:15pm to 2:15pm	i. 9:30pm to 7:30am
j. 08:00 to 13:00	k. 06:00 to 19:00	l. 07:30 to 14:45
m. 18:00 to 0:00	n. 19:30 to 07:30	o. 11:30 to 21:30

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ii. Advanced

Calculate the **total time (duration)** for the following situations.

<p>a. Shop is open 6 days a week: for 10 hours a day weekdays, and 8 hours on Sunday. Total open hours?</p>	<p>b. Journey to Sydney starts 05:30; arrival at 20:30. Actual travel time was 10 hours. Total time and how much time in breaks?</p>	<p>c. Need to slow cook a stew for 14 hours. Dinner party is at 7:30pm. When do put the stew on?</p>
<p>d. Deliveries between 7:30am to 9:15am, 10:40am to 12:05 pm and 3:35 pm to 5:37pm. How much travel time?</p>	<p>e. How much time in hours has elapsed for a project that takes 3 days, 14 hours and 3 hours.</p>	<p>f. 7 workers rostered on from 07:00 to 16:30 with a break of 1 hour each. What is the total time worked?</p>

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iii. Applied

Assume you are working a full-time week of work placement or in your preferred job. Calculate the total time you will spend on your workday. Include getting ready for work, travelling, hours worked and breaks.

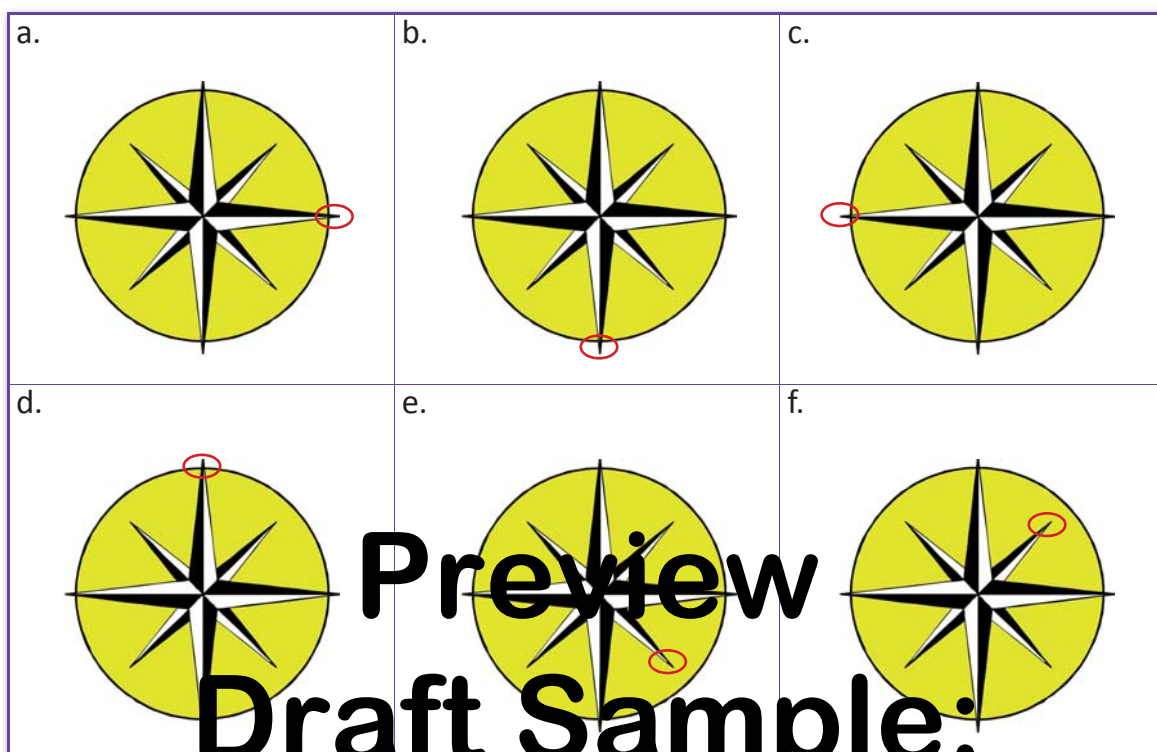
Now do the same based on being a 5-day part timer working 4-hour shifts with no breaks. Which do you prefer and why?

## 19 Directions and Location

### i. Skills Development

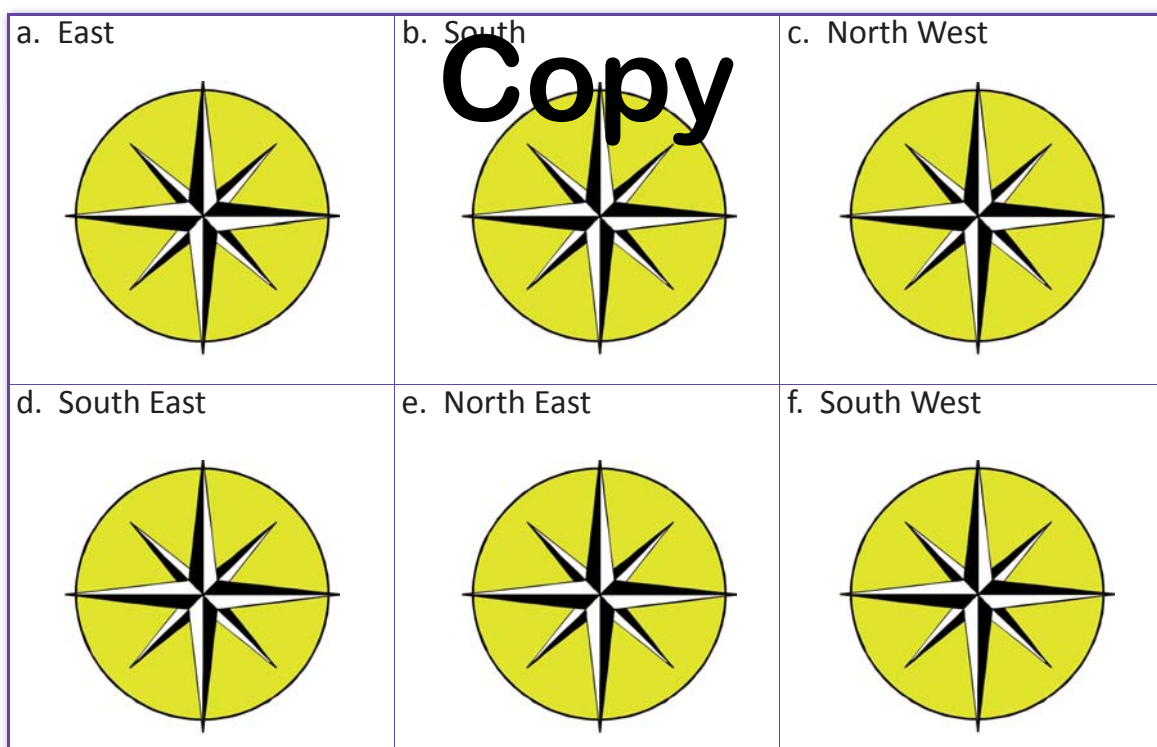
a. What are the following **directions** as shown on the compass?

Image:  
iStock/Thinkstock



b. Indicate the following **directions** on the compass.

**Do Not**



ii. Advanced & iii. Applied

Describe the **relative location** of key features shown in this cross-section image of a house. You could use left, right, next to, behind, up, down, etc..

Aim for a description of at least 8 features from the image such the rooms, people and key objects within the rooms.

Have a go at creating and describing a similar image based on your own dwelling.

*Image bottom: jiri\_kaderabek/  
Depositphotos.com*



## 20 Length and Distance

### i. Skills Development

Calculate the following **lengths** in the most appropriate unit. Make sure that you show appropriate workings out.






a. How many centimetres (cm) in a metre (m)?	b. How many cm in 3 m?	c. How many cm in 8.5 m?
d. How many millimetres (mm) in a centimetre (cm)?	e. How many mm in 53 cm?	f. How many mm in 180 cm?
g. How many millimetres in a metre (m)?	h. How many mm in 1.5 m?	i. How many mm in 4.8 m?
j. $10\text{ cm} + 27\text{ cm} =$	k. $110\text{ cm} + 50\text{ mm} =$	l. $2,048\text{ mm} - 20\text{ cm} =$
m. $6\text{ metres} + 50\text{ cm} =$	n. How many metres (m) in a kilometre (km)?	o. $4\text{ km} + 2,500\text{ m} =$

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## ii. Advanced

Calculate the following **lengths** in the most appropriate unit. Make sure that you show appropriate workings out.

a. $6 \times 2 \text{ m} + 50 \text{ cm} =$	b. $3 \times 8 \text{ m} - 500 \text{ cm} =$	c. $11 \times 2 \text{ cm} + 50 \text{ mm} =$
d. $14 \times 8 \text{ m} - 500 \text{ cm} =$	e. $12 \div 2 \text{ m} + 500 \text{ mm} =$	f. $60 \times 4 \text{ cm} - 4 \times 0.5 \text{ m} =$
g. Total length 4 m 	h. Total length 8 m 	i. Total length?   

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## iii. Applied

How much distance do you walk (or someone you know) in a week? Calculate the total distance. Is that enough to maintain a healthy lifestyle? Do some research and find out.

## 21 Measurements

### i. Skills Development


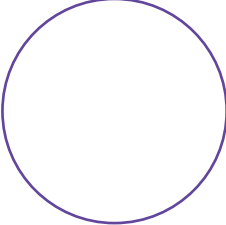
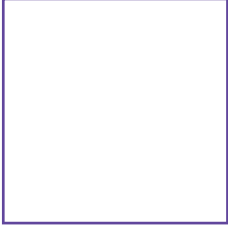



Calculate the following measurements in the correct units using the information provided. Make sure that you show appropriate workings out.

a. Perimeter of a square: 4cm	b. Perimeter of a rectangle: 8cm by 12cm	c. Perimeter of a rectangle: 13cm x 25cm
d. Perimeter of a rectangle: 2m by 1.5m	e. Circumference of circle: Diameter = 20cm	f. Circumference of circle: Radius = 10cm
g. Area of a square: 4cm <sup>2</sup>	h. Area of a square: 150mm <sup>2</sup>	i. Area of a rectangle: 50cm x 20cm
j. Area of a rectangle: 2m x 500mm	k. Area of a circle: Diameter = 16cm	l. Area of a circle: Radius = 1m
m. Volume of a square 4cm <sup>3</sup>	n. Volume of a rectangle: 10cm x 5cm x 20cm	o. Volume of a rectangle: 1m x 0.5m x 2m

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## ii. Advanced

Measure each of these shapes and then calculate the appropriate measurement. Scale each object by a factor of 2 and then re-calculate.

<p>a. Perimeter</p> 	<p>b. Circumference</p> 	<p>c. Area</p> 
<p>d. Area</p> 	<p>e. Area</p> 	<p>f. Volume</p> 

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## iii. Applied

You have baked a cake to take to school as a surprise for your friend's birthday. But you need to buy a cake box and some wrapping paper. You only have \$7. The cake is circular with a diameter of 30cm. It has a height of 10cm. At the cake shop they have a box that is 30cm<sup>2</sup> with a height of 11cm for \$5. The shop has another box that is 35cm<sup>2</sup> with a height of 15cm for \$6. The newsagent has wrapping paper of 3 metres for \$2 or 2 metres for \$1. Draw a diagram to show the cake and the cake box. Which combination of cake box and wrapping paper would you buy? Why so? Do the calculations to justify your answer.

## 22 Mass (Weight)

### i. Skills Development

Calculate the following **mass (weights)** in the most appropriate unit. Make sure that you show appropriate workings out.

a. How many grams (g) in a kilogram (kg)?	b. How many grams in 4 kg?	c. How many grams in 7.5 kg?
d. How many g in $\frac{1}{2}$ kg?	e. $0.7 \text{ kg} + 1.5 \text{ kg} =$	f. $0.4 \text{ kg} + 1 \text{ kg} + 500 \text{ g} =$
g. $6 \times 0.1 \text{ kg} =$	h. $5 \text{ kg} - 20 \text{ g} =$	i. $4 \times 250 \text{ g} =$
j. $10 \text{ kg} \text{ minus } 4.5 \text{ kg} =$	k. $4 \text{ kg} + 2 \times 2 \text{ kg} =$	l. $(250 \text{ g} \times 3) + 2 \times 1 \text{ kg} =$
m. How many kg in a tonne?	n. How many kg in 10 tonnes?	o. How many kg in 3.8 tonnes?

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ii. Advanced

Calculate the following **mass (weights)** in the most appropriate unit.

<p>a. John doesn't have any dumbbells so he curls 2kg bags of flour 100 times for each arm. Total weight?</p>	<p>b. If a butcher sells 50kgs of chops, 100 steaks each of 400g and 37 serves of other meats at 1kg each what is the total weight?</p>	<p>c. How many of you (based on your weight) would equal your family motor vehicle?</p>
<p>d. Gabi loads her van for her daily courier run. She has 6 parcels at 30kg, 12 parcels at 23kg, 14 parcels at 18kg and 25 parcels at 5kg. Total kg?</p>	<p>e. Sal is a vegetarian and eats 700g of apples per week, twice that weight in other fruit and 4 times the fruit total in vegetables. Total weight of fruit and vegetables per week?</p>	<p>f. What would be the total weight of a 22 player AFL side? Make an estimate and then find out.</p>

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iii. Applied

You are going on an overseas trip for 2 weeks and are allowed to take one suitcase with you.

- Where might you be going?
- What will you take with you?
- Find out the luggage weight limit from your airline of choice.
- What process would you use to ensure that your luggage fits within this weight limit?
- What items might you need to both include in, and discard from, your luggage to meet this weight limit; and why?

## 23 Capacity

### i. Skills Development

Complete answers for the following based on **fluid capacity**. Make sure that you show appropriate workings out.

a. How many millilitres (ml) in a litre?	b. How many ml in 3 litres?	c. How many ml in 6.5 litres?
d. How many ml in $\frac{1}{2}$ litre?	e. $0.5 \text{ litre} + 1.5 \text{ litre} =$	f. $0.3 \text{ litre} + 1 \text{ litre} + 500 \text{ ml} =$
g. $6 \times 0.5 \text{ litres} =$	h. $5 \text{ litre} \div 2 =$	i. $4 \times 375 \text{ ml} =$
j. 10 litres minus 4.5 litres =	k. $3 \text{ litres} + 2 \times 2 \text{ litres} =$	l. $(300 \text{ ml} \times 3) + 2 \times 1 \text{ litre} =$
m. How many cubic centimetres in a litre?	n. How many litres in a megalitre?	o. How many litres in a half a megalitre?

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**ii. Advanced**

a. Complete answers for the following based on **cooking fluid capacity**.

a. How many ml in a teaspoon?	b. How many ml in a tablespoon?	c. How many ml in a cup?
d. How many ml in 5 teaspoons?	e. How many ml in 6 tablespoons?	f. How many ml in 4 cups?
g. How many ml in 5 teaspoons, 2 tablespoons and 2 cups?	h. How many ml in 5 teaspoons, 2 tablespoons and 2 litres?	i. How many ml in 10 tablespoons and 5 cups?

b. Complete answers for the following based on **volume**. Note volume is height x width x depth and is shown in  $\text{cm}^3$  or  $\text{m}^3$ .

a. Volume of a package that is 10 cm x 12 cm x 20 cm.	b. Volume of a carton that is 50 cm x 35 cm x 40 cm.	c. Volume of a box that is 1 m x 2 m x 0.5 m.
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**iii. Applied**

Which has more ml? 24 cans of soft drink, 6 x 2 litres bottles, or 20 x 500 ml cups. What is the total volume of each in ml and in litres? Which would be cheapest?

## 24 Rosters & Timesheets

### i. Skills Development

- a. Complete a **roster** for each of the workers based on the following information. If you show this on the same roster template you could use different colours.

Henry	Henrietta
Mon: 8am - 5pm	Mon: 8am - 5pm
Tues: 9am - 6pm	Tues: Off
Wed: Off	Wed: 8am - 5pm
Thur: Off	Thur: 9am - 6pm
Fri: 8am - 5pm	Fri: 11am - 7:30pm
Sat: 10am - 7pm	Sat: 12pm - 7pm
Sun: 12pm - 4pm	Sun: Off

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00							
9:00							
10:00							
11:00							
12:00							
13:00							
14:00							
15:00							
16:00							
17:00							
18:00							
19:00							
20:00							

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- b. Calculate the **hours 'at work'** for each worker for the week. How many hours 'at work' does each average per day?

Henry	Henrietta



**ii. Advanced & iii. Applied**

Complete **timesheets** for Henry and for Henrietta based on the information in 'a'. Henry (aged 16) is paid \$12 an hour and Henrietta (an adult) is paid \$20 an hour. Workers get a 1 hour unpaid break if they work more than 5 hours in a shift.

Name:							
	Date	Start	Finish	Break	Hours Worked	Rate	Total
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
<b>Totals</b>							

Name:							
	Date	Start	Finish	Break	Hours Worked	Rate	Total
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
<b>Totals</b>							

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