

Teacher assessment

Key stages 2 and 3

Mathematics: learner profile

Level 6

Foreword

This profile is intended to help teachers see the type of evidence that can be used to take to a cluster meeting, in order to support the best-fit judgements made. It also clearly demonstrates that the evidence predominantly lies in a pupil's book and hence is what is already available to the teacher.

The profile also includes a detailed commentary which provides clarity on why the best-fit judgment was awarded. There is no suggestion or expectation that a learner profile is produced for every pupil in the cohort or that teachers write such an extensive commentary.

Learner Profile Mathematics Level 6

.

||

.

Measurements

$$\begin{array}{c} \text{Times} \\ \curvearrowright \\ 1 \text{ cm} = 10 \text{ mm} \\ \text{divide} \end{array}$$

$$1 \text{ m} = 100 \text{ cm}$$

$$1 \text{ km} = 1000 \text{ m}$$

$$1 \text{ Kg} = 1000 \text{ g}$$

$$1 \text{ Tonne} = 1000 \text{ Kg}$$

$$1 \text{ cl} = 10 \text{ ml}$$

$$1 \text{ l} = 100 \text{ cl}$$

$$1 \text{ m} = 1000 \text{ mm}$$

L5 - Convert one metric unit to another.

$$1. 5000 \text{ m} = 5 \text{ km } (\div 1000) \checkmark$$

$$2. 78521 \text{ m} = 78.521 \text{ km } (\div 1000) \checkmark$$

$$3. 11.5 \text{ km} = 11500 \text{ m } (\times 1000) \checkmark$$

$$4. 42 \text{ cm} = 0.42 \text{ m } (\div 100) \checkmark$$

$$5. 225 \text{ cm} = 2.25 \text{ m } (\div 100) \checkmark$$

$$6. 89 \text{ cm} = 890 \text{ mm } (\times 10)$$

$$7. \frac{1}{2} \text{ km} = 500 \text{ m } (\times 500)$$

$$8. 400 \text{ ml} = 0.4 \text{ l } (\div 1000) \quad 1$$

$$9.50 \text{ cl} = 500 \text{ ml} (\times 10)$$

3414

Metric units

$$1. 0.2 \text{ m} = 20 \text{ cm} \checkmark$$

$$6. 2 \times 1.005 \text{ kg} = 0.00001005 \times 1005 \text{ gm}$$

$$c. 10.07 \text{ L} = 10 \text{ L } 0.07 \text{ ml } \times$$

$$d. 30.09 \text{ m} = 30 \text{ m } 0.09 \text{ cm } \times$$

2.	2000 pc	=	6500g
	1000 pc	=	3250g
	500 pc	=	1625g
	50 pc	=	812.5g X

$$3. 19.88 \text{ km} \doteq 1 \text{ min}$$

$$0.01988 \text{ km} = 1(\text{min}) \times 00 \text{ mins } \times$$

Metric Units

4. $5\text{ kg} \div 7 = 0.7$ each day

5. $5000 \div 9 = (555\text{ ml}) \times (1250\text{ ml}) \times 750\text{ ml}$

1a. $170\text{ cm} = 1.7\text{ m}$ ✓

b. $2255\text{ g} = 0.2255$ ✗

c. $135\text{ m } 90\text{ cm} = 135.9\text{ m}$ ✓

d. $60\text{ Km } 750\text{ m} = 60.75\text{ Km}$ ✓

2. $6 \times 275 \times 7 =$

	2 ⁰⁰	7 ⁰	5	
6	1200	420	30	= 1200
		0420		
		0030		
			1000	650
7	7000	4200	350	0
		7000		
		4200		
		0350		
				11550

$11550\text{ ml} = 11.55\text{ L}$ ✓

3. 5000×60

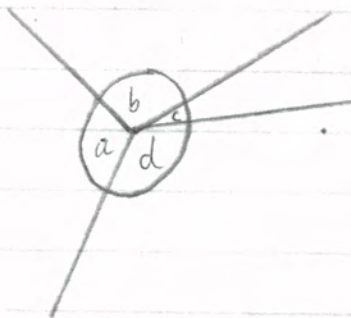
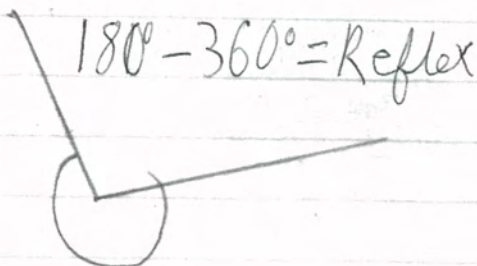
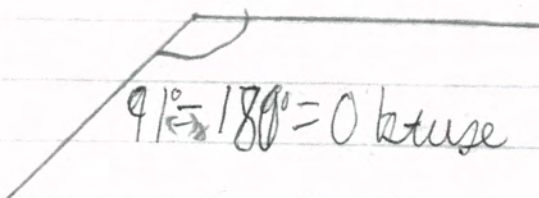
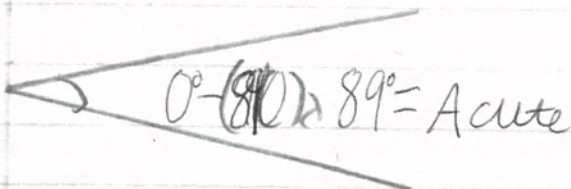
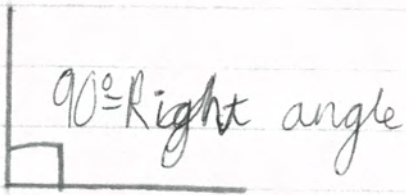
	5 ⁰⁰⁰	0 ⁰⁰	0 ⁰	0	
6 ⁰	30000	000	00	0	
0	0000	000	00	0	
				300000	
2 ⁰	20000	000	00	0	
4	40000	000	00	0	
				6000000	
				1200000	
				7200000	

$7200000\text{ ml} = 7200\text{ L}$

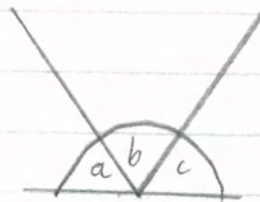
4.1455 ✓

10.4.14

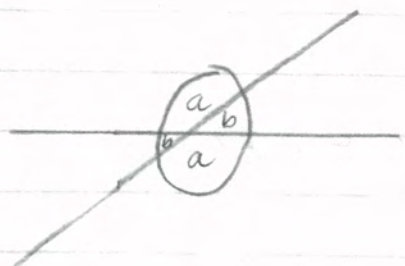
Angles



Angles at a point
Add to 360°

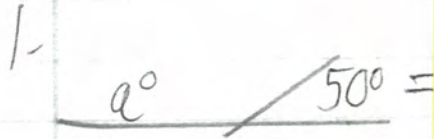
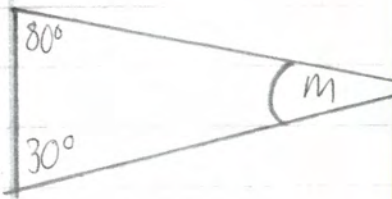


Angles on a
straight line
Add to 180°



Vertically opposite
Angles are equal

LS (implied). Angle rules, calculate
 yr 7 POS. angles on a straight
 line, around a point,
 vertically opp.



2- $140^\circ / b^\circ = b^\circ = 40^\circ$; Angles on a straight line. ✓

3- $c = 150^\circ$; Angles on a straight line. ✓

4- $d = 50^\circ$; Angles on a straight line. ✓

6- $= g^\circ = 50^\circ$; Angles on a straight line. ✓
 $= f^\circ = 130^\circ$; Vertically opposite. ✓

7- $= h^\circ = 40^\circ$; Vertically opposite
 $= i^\circ = 140^\circ$; Angles on a straight line

1- $= a^\circ = 134^\circ$; Angles at a point. ✓

2- $= b^\circ = 153^\circ$; at a point. ✓

L5- Understanding of place value
to multiply whole numbers.

a. $537 \times 45 = 503$

40	0000	280
52500	15035	

 $= 20000$
 02500
 01200
 00280
 00150
 00035

 24165

 111

b. $682 \times 537 = 500307$

600	30000	18000	4200
80	40000	24000	560
2	10000	600	14

 $= 300000$
 040000
 018000
 004200
 002400
 001000
 000560
 000060
 000014

 366234

 111

c. $636 \times 58 = 636$

3	5	3	1	3
6	8	4	2	4

 $888 = 36,888$

d. $362 \times 87 = 362$

2	4	4	1
7	2	1	4

 $494 = 27,494$

$$e. 675 \times 39 = 675$$

2	8	2	1	5	3
6	5	6	4	3	5
3	7	5			

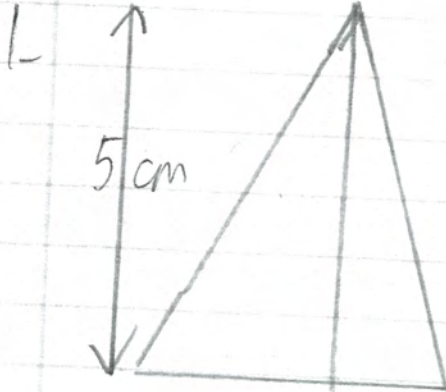
$$= 26,325$$

Area of triangles

6 May 20

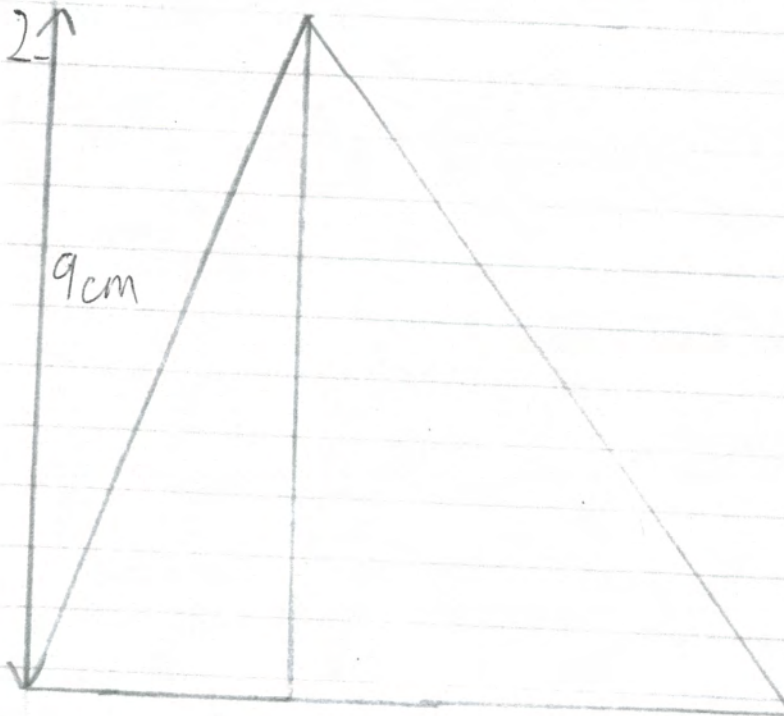
$$\frac{b \times h}{2}$$

b = base
h = height



4 cm

$$4 \times 5 = 20 \div 2 = 10 \text{ cm}^2 \checkmark$$



10 cm

$$9 \times 10 = 90 \div 2 = 45 \text{ cm}^2 \checkmark$$

3.

5

3.

3

2

$$8 \times 5 = 40 \div 2 = 20 (= 2 \times 10) = 10 \text{ cm}^2$$

$$5 \times 2 = 10 \text{ cm}^2$$

$$3 \times 3 = 9 \div 2 = 4.5$$

$$\begin{array}{r} 10.0 \\ + 04.5 \\ \hline 14.5 \end{array}$$

Fraction	Decimal	Percentage
$\frac{3}{4}$ ✓	0.75 ✓	75% ✓
$\frac{2}{5}$ ✓	0.4 ✓	40% ✓
$\frac{3}{5}$ ✓	0.6 ✓	60% ✓
$\frac{9}{10}$ ✓	0.9 ✓	90% ✓

$$1. \frac{13}{50} = \frac{26}{100} = 26\% \checkmark$$

$$2. 68\% \checkmark$$

$$3. 14\% \checkmark$$

$$4. 71\% \checkmark$$

$$5. 65\% \checkmark$$

14 - Equivalences of F/D/%

6- 30% ✓

7- 45% ✓

1- 3-542 ✓

2- 6-2 ✓

3- 85-10 ✓

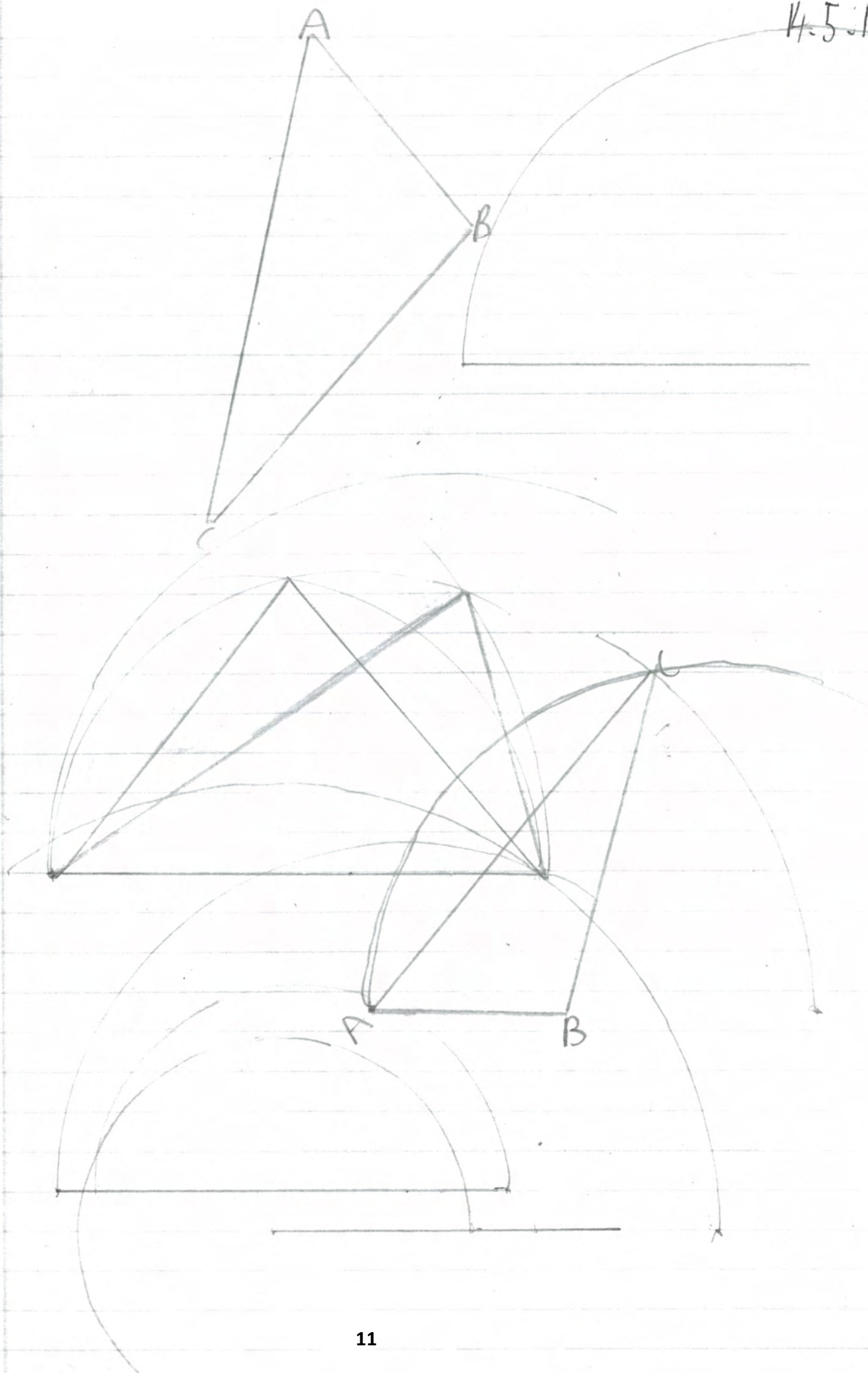
4- 654.2 ✓

5- 9.15 ✓

6- 11-30 ✓

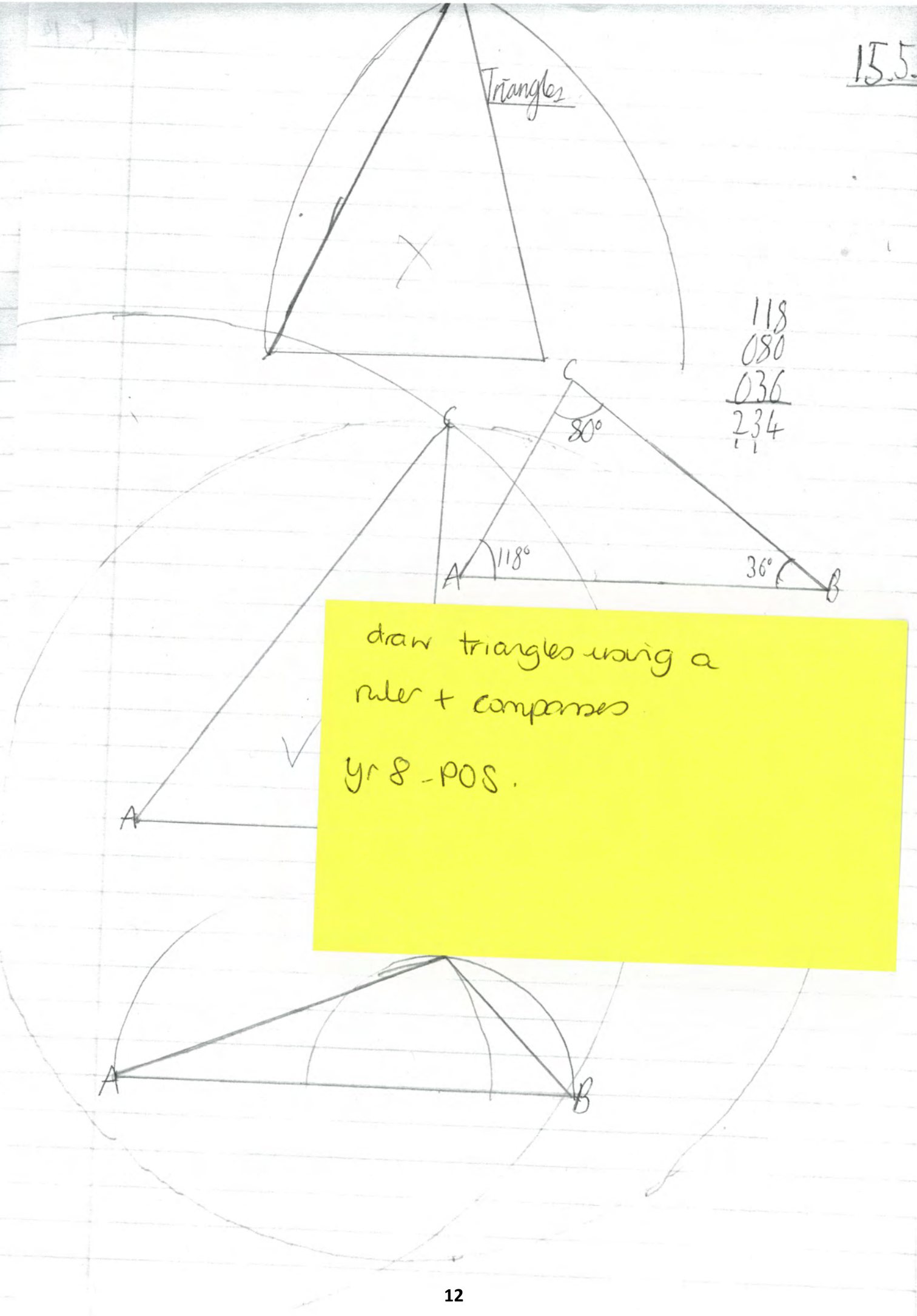
7- 440 ✓

14-5-14



Triangles

118
080
036
234
11



draw triangles using a
ruler + compasses

yr 8 - POS.

Ratios

$$£280 \div 7 = 40$$

$$3 \div 4 = 3 + 4 = 7$$

Ni Ne

$$7 \times 3 = 21$$

$$7 \times 4 = 28$$

$$7 \times 40 = 280$$

$$3 \times 40 = 120$$

$$4 \times 40 = 160$$

$$£120 = \text{Nieces}$$

$$£160 = \text{Nephews}$$

1- 36 Horses
Stallions, Mares, Foals
2 : 7 : 3

$$2 + 7 + 3 = 12 \times 3 = 36$$

$$1 = 3$$

$$6 = \text{Stallions}$$

$$21 = \text{Mares}$$

$$9 = \text{Foals}$$

$$21 + 9 + 6 = 36$$

a) Ratio of boys: girls in a class is 4:3
If there are 20 boys how many girls are there?

$$20 \div 4 = 5$$

$$1 = 5$$

$$5 \times 3 = 15$$

$$\text{Ratio (C)} \times 20 = 15$$

$$b) 714 \div 3 = 238 \quad \overline{238} \overline{)714} = 238 \times 4$$

$$\begin{array}{r} 238 \\ 4 \overline{)8752} \\ \underline{40} \\ 075 \\ \underline{00} \\ 752 \\ \underline{0000} \\ 0 \end{array}$$

(238 Boys) \times
714 Girls
952 Boys

1. $24 = 35 \checkmark$

2. $2 = 5 \checkmark$

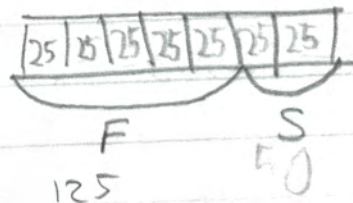
3. $5 = 2 = 5 + 2 = 7$

Flour Sugar

$$\text{Flour} = 125g$$

$$\text{Sugar} = x$$

$$\begin{array}{r} 017-8571421 \\ 7 \overline{)12500000000} \\ \underline{7000000000} \\ 5500000000 \\ \underline{3500000000} \\ 2000000000 \\ \underline{1400000000} \\ 600000000 \\ \underline{350000000} \\ 250000000 \\ \underline{175000000} \\ 75000000 \\ \underline{35000000} \\ 40000000 \\ \underline{35000000} \\ 5000000 \\ \underline{3500000} \\ 1500000 \\ \underline{1050000} \\ 450000 \\ \underline{350000} \\ 100000 \\ \underline{70000} \\ 30000 \\ \underline{21000} \\ 9000 \\ \underline{7000} \\ 2000 \\ \underline{1400} \\ 600 \\ \underline{350} \\ 250 \\ \underline{175} \\ 75 \end{array}$$



50g of sugar \checkmark

4.

22.5.14

Ratios

4. Coil of wire $3:4$
 $4 = 32\text{cm}$

$$32 \div 4 = 8 = 1 \times 3$$

$$8 \times 3 = 24$$

$$24 + 32 = 56\text{cm}$$

$$\text{Length} = 56\text{cm} \checkmark$$

5. 77 pupils in the zoo in the afternoon \checkmark

6. The length of the shorter rope is $56\text{cm} \checkmark$

7. $52:39 = \text{Ken} : \text{Bob} = 4:3 \checkmark$

1. $1:3:8 \checkmark$

2. $2:3:7 \checkmark$

3. $30\text{cm} \checkmark$

4.

a. $480\text{ml} \checkmark$

b. $1440\text{ml} \checkmark$

5.

a. Annabel \checkmark

b. ~~200~~ 5 \checkmark

16 - Calculating using ratios
in appropriate situations.

Simplifying ratios.

Ratio Worksheet

1. The three angles of a triangle are in the ratio of 3: 5: 7. Calculate the size of each angle.

$$15:3=5$$

$$=15^\circ$$

$$180^\circ \div 15 = 12$$

$$3 \times 12 = 36$$

$$5 \times 12 = 60$$

$$7 \times 12 = 84$$

$$= 180^\circ$$

o m

2. Fruit punch is made by mixing orange juice and mango juice in the ratio of 4:1.
- How much orange juice do I need with 250 ml of Mango?
 - How much Mango Juice do I need with 800ml of Orange?
 - How much Mango juice is needed to make 2 litres of mixed punch?

a) 1000 ml

b) 200 ml

c) 2l = 2000 ml

$$4+1=5$$

$$2000 \div 5 = 400$$

$$1600 \text{ ml} = \text{mango} \quad \leftarrow$$

$$400 \text{ ml} = \text{orange}$$

3. A man planted 600 red flowers and 240 yellow flowers in his garden.

- Write down the ratio of red to yellow flowers in its simplest form.
- The man also planted some crocus and daffodil bulbs, in the ratio of 1:5. If he planted 420 bulbs in total how many crocus bulbs did he plant?

a) 600 : 240

$$60 : 24$$

$$10 : 4$$

$$5 : 2$$

b) 1:5 = 6

$$c:d$$

$$420 \div 6 = 70 \text{ each}$$

$$70 \text{ crocus}$$

$$350 \text{ daffodils}$$

Past Exam Questions

- 1.(a) Tim and Shula bought a car for £5000.
Tim paid £3500 and Shula paid £1500.

Write the ratio 3500 : 1500 as simply as possible.

$$\begin{array}{r} 35:15 \\ 7\cancel{5}:3 \\ \hline 7 \quad 3 \end{array}$$

[2]

- (b) Tim, Shula and Carol share the running costs of the car in the ratio 1 : 2 : 3.
Last year it cost £1860 to run the car.

How much did Carol pay? $\begin{array}{r} 310 \\ 6 \overline{)1860} \end{array}$

310 each

$$\begin{aligned} T &= 310 \\ S &= 2 \times 310 = 620 \\ C &= 3 \times 310 = 930 \end{aligned}$$

£ 930

2. Edie drinks 12 litres of water in 5 days.

At this rate, how much water would she drink in 3 days?

$$\begin{array}{r} 12 \div 5 \\ 2.4 \\ 5 \overline{)12.0} \end{array}$$

$$2.4 \times 3 =$$

$$\begin{array}{r} 2.4 \\ 3 \overline{)7.2} \\ 7.2 \\ \hline \end{array}$$

7.2 litres

[2]

- 3.(a) During one hour a garage sold 2750 litres of petrol
and 1750 litres of diesel.

Work out the ratio of petrol to diesel.
Give your answer in its simplest form.

p:d

$$2750 : 1750$$

$$275 : 175$$

$$55 : 35$$

$$\begin{array}{r} 11 \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} 55 \\ 5 \overline{)275} \end{array}$$

$$\begin{array}{r} 35 \\ 5 \overline{)175} \end{array}$$

$$11:7$$

6-

a-35

4.6.14

~~XXXXXXXXXX~~

Round to the nearest 10, 100, 1000 and decimal places ✓

Estimate (Using rounding) ✓

Written methods for calculating ✓

Calculate with negative numbers ✓

Factors / Multiples ✓

Equivalent fractions ✓

Calculating with fractions ✓

Write and evaluate algebraic expressions ✓

Calculating with decimals (Stopped)

Solve equations ✓

Angles.

1. $4330 (100\ 0) = 4000$ ✓

2. $3470 (10\ 0) = 3500$ ✓

3. $3335 (10) = 3340$ ✓

4. $4453 (100\ 0) = 4000$ ✓

5. $1214 (10\ 0) = 1200$ ✓

6. $3426 (10) = 3430$ ✓

1. $6.2184 (1\ dp) = 6.2$ ✓

2. $85.102 (2\ dp) = 85.10$ ✓

$$3. 654.21 (1 \text{ dp}) = 654.2 \checkmark$$

$$4. 9.152 (2 \text{ dp}) = 9.15 \checkmark$$

$$5. 11.296 (2 \text{ dp}) = 11.30 \checkmark$$

$$6. 437.015 (10) = 440 \checkmark$$

$$1. 800 \times 200 = 160,000 \div 100 = 1,600 \checkmark$$

$$2. 400 + 100 = 500 = \text{estimate} \checkmark$$

$$(3) \begin{array}{r} \$82 \\ + 116 \\ \hline 498 \end{array} = \text{exact} \checkmark$$

$$3. 800 - 400 = 400 = \text{estimate} \checkmark$$

$$\begin{array}{r} 807 \\ - 374 \\ \hline 433 \end{array} = \text{exact} \checkmark$$

$$1. \begin{array}{r} 300 \\ 91270963 \\ 2853 \end{array} \checkmark$$

$$2. \begin{array}{r} 253 \\ 204106 \\ 714321 \\ 6831 \end{array} \checkmark$$

$$3. \begin{array}{r} 1374 \\ 3 \overline{) 4122} \end{array} = 1374 \checkmark$$

L4 - ~~Process~~ a range of written
four operations methods.

$$4. \overline{17 \over 59834} = 352 \checkmark$$

$$5. \overline{5 \over 6323000} = 126.4 \checkmark$$

5 Jan

$$1. \begin{array}{c} 241 \\ 3 \overline{061203} \\ 7 \overline{142807} \\ 08 \overline{917} \end{array} = 8917 \checkmark$$

$$2. \begin{array}{c} 362 \\ 5 \overline{153010} \\ 2 \overline{061204} \\ 18 \overline{824} \end{array} = 18824 \checkmark$$

$$3. \begin{array}{c} 171 \\ 2 \overline{021402} \\ 4 \overline{042804} \\ 04 \overline{164} \end{array} = 4104 \checkmark$$

$$(1) \overline{14 \over 1958} = 142 \checkmark$$

$$2. (17 \overline{5280}) \times 17 \overline{03} = 384$$

$$3. 21 \overline{5061} = 241$$

1. 473 cakes 25 were eaten. The rest are packed in boxes

$$473 - 25 = 448$$

$$\overline{056 \text{ boxes}} \checkmark$$

$$8 \overline{448}$$

2. $30z \cdot 5x z$ as m . How many more z than m

$$30 \div 5 = 6$$

24 more z than m ✓

1. $-8 + 3 = -5$ ✓

2. $-8 + -3 = -11$ ✓

3. $-8 - 3 = -11$ ✓

4. $-8 - -3 = -5$ ✓

5. $-3 - -8 = 5$ ✓

1. $6 \times 4 = 24$ ✓

2. $-6 \times -4 = 24$ ✓

3. $-6 \times 3 = -18$ ✓

4. $6 \times -4 = -24$ ✓

5. $25 \div -5 = -5$ ✓

1. $\frac{5}{6} = \frac{25}{30}$ ✓

2. $\frac{2}{3} = \frac{18}{27}$ ✓

$$3 \frac{4}{5} = \frac{24}{30} \checkmark$$

$$4 \frac{5}{7} = \frac{45}{63} \checkmark$$

$$5 \frac{4}{15} = \frac{12}{45} \checkmark$$

$$6 \frac{12}{13} = \frac{36}{39} \checkmark$$

$$7 \frac{1}{3} \checkmark$$

$$1. \frac{3}{4} + \frac{2}{5} = \frac{15}{20} + \frac{8}{20} = \frac{23}{20} = 1 \frac{3}{20} \checkmark$$

$$2. \frac{2}{3} + \frac{3}{7} = \frac{14}{21} + \frac{9}{21} = \frac{23}{21} = 1 \frac{2}{21} \checkmark$$

6 June

$$3. \frac{3}{10} + \frac{2}{3} = \frac{9}{30} + \frac{20}{30} = \frac{29}{30} \checkmark$$

$$\frac{2}{3} \text{ of } 39$$

$$1. 39 \div 3 = 13$$

$$13 \times 2 = 26$$

2. $\frac{1}{5} \times \frac{2}{5}$ = Multiply top \times top and bottom \times bottom

$$\frac{2}{25}$$

3. $\frac{4}{7} \times 25$ = make it $\frac{4}{7} \times \frac{25}{1}$ then do 4×25 and 7×1

$$\frac{100}{7}$$

4. $\frac{1}{5} \div \frac{2}{5}$ = turn the second fraction upside down and multiply $= \frac{1}{5} \times \frac{5}{2} = \frac{5}{10}$

5. John had some apples and and bananas. After eating $\frac{1}{4}$ of the apples he had twice as many bananas as apples left. If he has 9 more bananas than apples, how many apples did he have to start with

A

3	3	3	3
9			

B

9	9
---	---

He started with 12 apples.

1. $4e + 3 - 6e + 5 + 4e = 2e + 8$ ✓

2. $4 + 8d - 3d = 4 + 5d$ ✓

$$1. 8x + 9 = 3x + 69$$

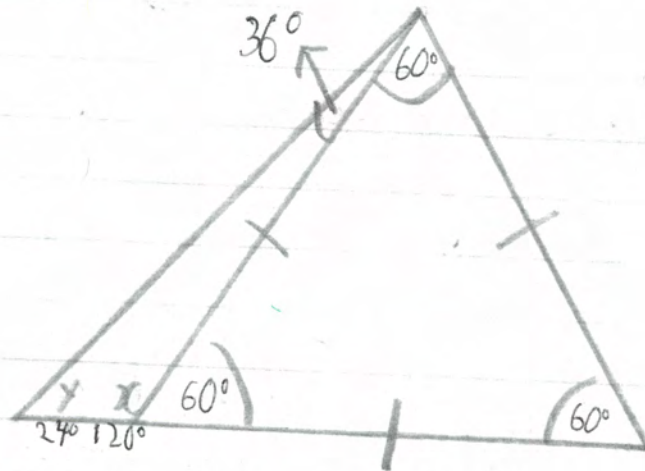
$$x = 12 \checkmark$$

$$2. 4x + 37 = 7x + 4$$

$$x = 11 \checkmark$$

$$3. 2x + 17 = 7x + 2$$

$$1. x = 3 \checkmark$$



Triangle = 180°

$$60 + 60 + 60 = 180$$

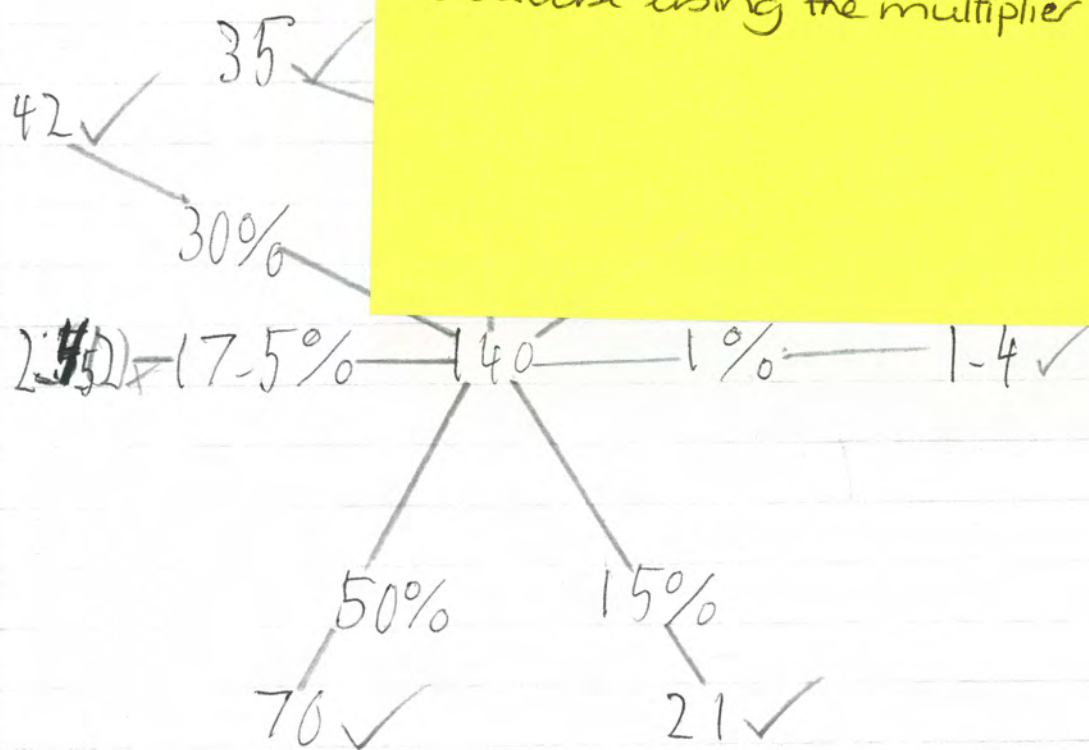
$$36 + 24 + 120 = 180$$

$$46 + 24 + 60 = 180$$

Areas of shape are not necessarily drawn to scale

L5- Percentage parts of quantities

Leading to L6 - % increase + decrease using the multiplier method.



1. 68% of $10 = 68 \times 0.1 = 6.8$

2. 20.7 69% of $30 = 69 \times 0.3 = 20.7$

3. $(8 \times 0.6) \times 8\%$ of $600 = 8 \times 0.6 = 4.8$

4. 40% of $600 = 40 \times 0.6 = 24$

5. 96% of $200 = 96 \times 0.2 = 19.2$

1. $6 \div 54 = 80 = 0.675 \times 100 = 67.5\% \checkmark$

2. $43 \div 60 = 0.716 \times 100 = 71.6\% \checkmark$

Some shoes cost £60. If they have 15% off what is the new cost?

10% of £60 = £6 5% = £3 15% £9 $60 - 9 = £51$

that is equal to $60 \times 0.85 = £ 51$

If the 0.85 was a percentage it would be which is $100\% - 15\%$.

1. $82 \times 0.2 = 16.4$ ($\times 100 = 1640$)

2. $4828 \times 0.75 = 428.98$

3. $47 \times 0.89 = 41.83$

4. $88 \times 0.77 = 67.76$

5. $592 \times 0.62 = 37.04$

6. $14 \times 0.47 = 6.58$

You have the correct Multipliers - now use a calculator to work out the reduced amount.

LG - % increase/decrease.

25

To find $(\text{£}) \times 37\%$ of $\text{£}235$ is to times 235 by the ^{answer} difference of $100-37$. $235 \times 0.63 = 148.05$

1. $430 \div 10 = 43 \times 4 = 172$

$430 + 172 = \text{£}602$

$100\% + 40\% = 140\%$

$430 \times 1.4 = 602$

1. Increase by $\text{£}24$ by 90%

$24 \times 1.9 = 45.6 \checkmark$

2. Increase $\text{£}80$ by 9%

$1.09 \times 80 = 87.2 \checkmark$

3. Increase $\text{£}800$ by 20%

$800 \times 1.2 = 960 \checkmark$

4. 47 increased by 34%

$47 \times 1.34 = 62.98 \checkmark$

5. Increase 86 by 14%

$86 \times 1.14 = 98.04 \checkmark$

6. What is 43% more than 162

$$162 \times 1.43 = 231.66 \checkmark$$

7. 546 plus an extra 39%

$$546 \times 1.39 = 758.94 \checkmark$$

8. 74 increased by 3%

$$74 \times 1.03 = 76.22 \checkmark$$

Percentages

$$1. 68 \times 1.21 = 82.28$$

$$2. 98 \times 0.68 = 66.64$$

$$1. 820 \times 1.07 = 877.4 - 820 = \$57.40 \checkmark$$

$$2. 90 \times 1.07 = \$96.3 - 90 = \$96.30 \checkmark$$

$$6. \$96.30 \checkmark$$

$$3. 920 \times 1.07 = \$984.40 \checkmark$$

$$4. 240 \times 1.07 = \$256.80 \checkmark$$

$$5. 60 \times 0.95 = \$57 \checkmark$$

$$6. 35 \times 15 = \$525 \times 0.85 = \$446.25 \checkmark$$

(7)

A rugby shirt is in a sale "15% off"

It will cost £55.25

What was its cost before it was reduced.

$$£55.25 \rightarrow 85\%$$

$$55.25 \div 85 = 0.65 \Rightarrow 1\%$$

£65

The 85% comes from "100% - 15%"

The price of a car increases in value by 12%. It now costs £9200.

What was its original value?

$$9200 \div 1.12 \times 100 = 8214.28 \checkmark$$

Decrease

- 1). 30 by 20% 2). 70 by 40% 3). 80 by 15% 4). 220 by 5%

- 1). 30 by 20%
- 2). 70 by 40%
- 5). A season ticket for Bolton F.C. this season costs £410. It is to go up by 34% next season. How much will a season ticket cost next season ?
- 6). A shirt is slightly shop soiled so it is reduced by 30%. It was £40.50, how much is it to be sold for ?
- 7). The bill for a meal came to the cost of the meal plus 15% service charge. The total cost was £80.50. What was just the cost of the meal ?

$$1. \quad 30 \times 1.2 = 36$$

$$2.70 \times 1.4 = 98$$

3. $80 \times 0.85 = 68$

$$4.220 \times 0.95 = 209$$

5. $410 \times 1.34 = 549.40$

6. $(40 \times 5) \times 40.5 \times 0.7 = £28.35$

7. $80.5 \div 115 = 0.7 = 1\%$

$$0.7 \times 15 = 10.5 = 15\%$$

$$80.5 - 10.5 = \pounds 70.00$$

well done ~~you~~

27.6.14

Percentages

$$1. 144 \times 44 \times 0.8 = 35.20$$

$$2. 5400 \times 1.06 = 5724$$

$$3. 245 \times 0.7 = 171.5$$

$$4. 95 \times 0.93 = 88.35$$

$$5. 2.8 \times 1.01 =$$

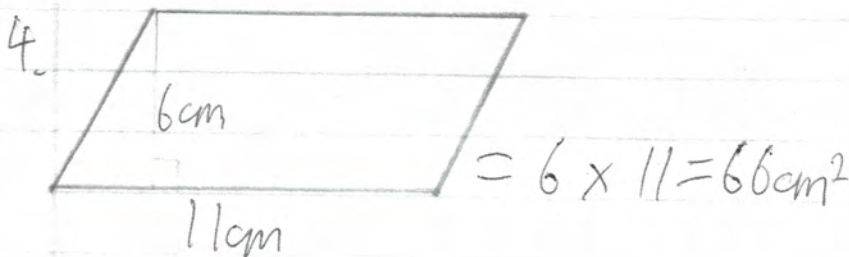
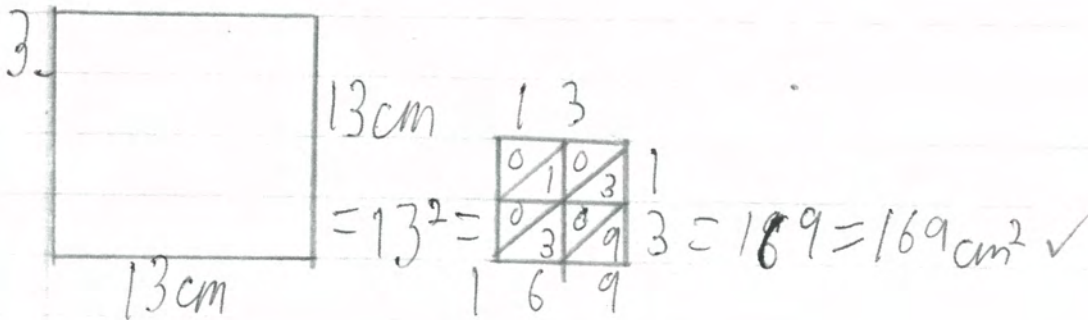
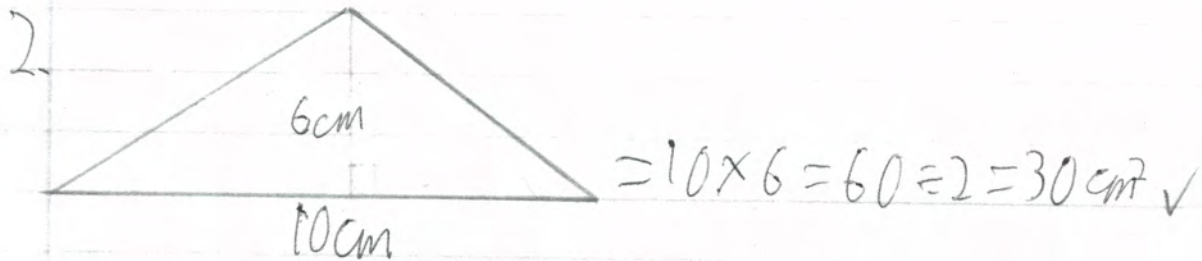
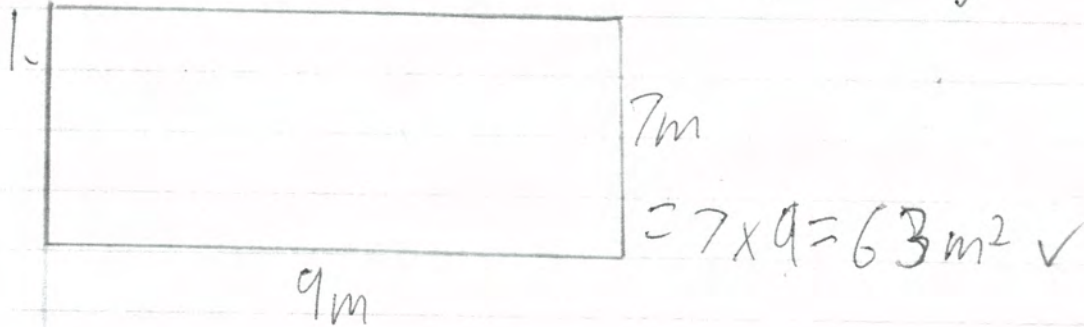
4 July

Formulae of Parallelogram and Trapezium (Area)

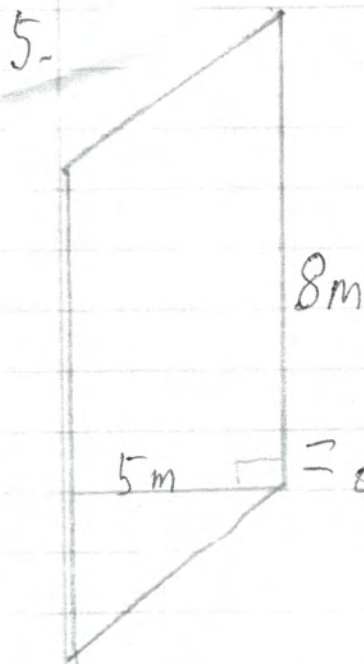
Area of parallelogram = area = $b \times h$ = base \times height

Area of trapezium = $h \times (b+c) \div 2$

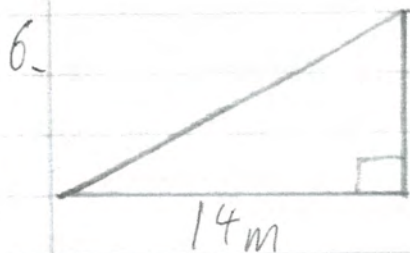
(base add), bottom add top \times height $\div 2$



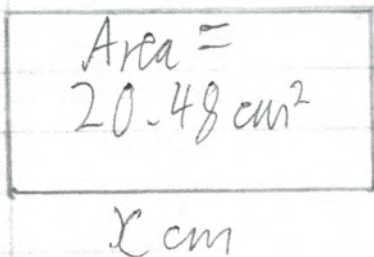
Use formula to find area of
 parallelogram - yr 7 POS
 area of trapezium - yr 8 POS



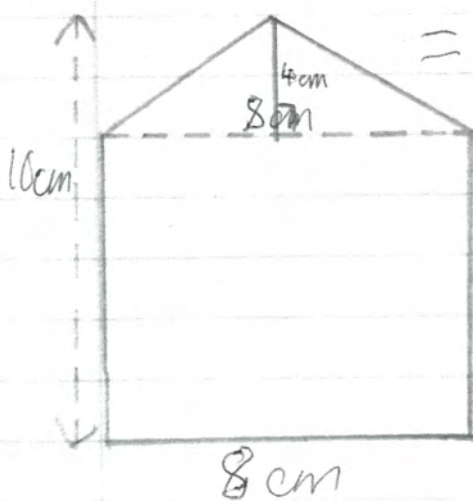
$$= 8 \times 5 = 40 \text{ m}^2 \checkmark$$



$$= 14 \times 8 = 112 \div 2 = 56 \text{ m}^2 \checkmark$$



$$= (3.2 \times 6.4) \times 100 = 20.48 \text{ cm}^2 \checkmark$$



$$= 8 \times 4 = 32 \div 2 = 16 \text{ cm}^2$$

$$6 \text{ cm}$$

$$= 6 \times 8 = 48 \text{ cm}^2$$

$$\begin{array}{r} 48 \\ + 16 \\ \hline 64 \text{ cm}^2 \checkmark \end{array}$$

	1	8	5	
0	0	1	0	0
3	0	8	6	4
2	0	5	4	0
4	0	5	4	0
2				

$$225 = 34225 - 37$$

$$\begin{array}{r} 34225 \\ 00037 \\ \hline 34188 \end{array}$$

$$20 \overline{) 34188} = 1,709.4$$

$$50 + 30\% = 130\%$$

$$50 \times 1.3 = 65$$

3. 3% of $500 = 15 \checkmark$

4. $23 \div 0.5 = 46 \checkmark$

5. Book = £6.99. 5 books = £34.95 \checkmark

6. $\sqrt{81} = 9 \checkmark$

7. Area of triangle. Base = 7cm Height = 9cm = $63 \div 2 = 31.5 \checkmark$

8. 0.784 to 2dp = $0.78 \checkmark$

9. $\frac{3}{5}$ as $\% = 60 \checkmark$

10. $\frac{4}{7}$ of $28 = 16 \checkmark$



Target areas - Working out the area of triangles and multiplying 2 decimals.

a) $75^\circ \checkmark$

b) $45^\circ \checkmark$

c) $92^\circ \checkmark$

d) $105^\circ \checkmark$

e) $80^\circ \checkmark$

f) $40.7 \checkmark$

11.

$$\begin{array}{r}
 4^{\circ} 8 \\
 3^{\circ} \begin{array}{|c|c|} \hline 1200 & 240 \\ \hline \end{array} \\
 6 \begin{array}{|c|c|} \hline 240 & 48 \\ \hline \end{array} = 1200 \\
 0240 \\
 0240 \\
 0048 \\
 \hline
 1728 \checkmark
 \end{array}$$

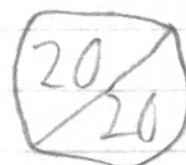
12. 3 8ths of 24

$$\begin{array}{c}
 24 \\
 \swarrow \quad \searrow \\
 \boxed{3} \boxed{3} \boxed{3} \boxed{3} \boxed{3} \boxed{3} \boxed{3} \boxed{3} \\
 \swarrow \quad \searrow \quad \searrow \\
 3+3+3 = 9 \checkmark
 \end{array}$$

13. How many $\frac{1}{4}$ in $5\frac{4}{8}$? = 22 ✓14. How many $\frac{1}{4}$ in $2\frac{1}{3}$? = 21 ✓15. $0\frac{2}{5}$ as a decimal? = 0.4 ✓

16. Find 10% of £5.4? = £5.40 ✓

17. Find 2% of 150? = 3 ✓

18. Find the area of a triangle. Base 8cm x 10cm = 80cm² = 419. What is $\sqrt{64}$? = 8 ✓20. What is $\frac{1}{8}$ as a percentage? = 12.5 ✓

1. $0.7 \times 0.3 = 0.021 \times$

2. $0.4 \times 0.2 = 0.08 \times$

Numeracy Practice

1. $19 - 3 \times 4 = 7 \checkmark$

2. What is the value of $2^4 \times 2 = 16 \checkmark$

3. The factors of 24

1 \checkmark
 2 \checkmark
 3 \checkmark
 4 \checkmark
 6 \checkmark
 12 \checkmark
 24 \checkmark
 8 \checkmark

4. A book is £7.99. How much does 6 books cost
~~£47.94~~ \checkmark 5. What number do you need to add to 0.017 to make 2
1.983 \checkmark 6. What is 0.8137 to 3 decimal places?
0.814 \checkmark 7. Multiply 0.9 and 0.3 = $(3) \times 0.7 = 0.27 \checkmark$

8. $0.3 \div 0.1 = 0.3 \checkmark$

9. $14 \div 0.5 = 28 \checkmark$

$$\begin{array}{r} 12.745 \\ 5 \overline{) 63.725} \end{array} \checkmark$$

Problem 1

$$5^2 = 25$$

$$2^5 = 32 \checkmark$$

$$2 \times 5 + 5 \times 2 = 20 \checkmark$$

$$5 \times 5 = 25$$

$$2 \times 2 \times 2 \times 2 \times 2 = 2 \times 2 = 4 \times 2 = 8 \times 2 = 16 \times 2 = 32$$

$$2 \times 5 = 10$$

$$5 \times 2 = 10$$

$$\rightarrow 20 \leftarrow$$

Problem 2

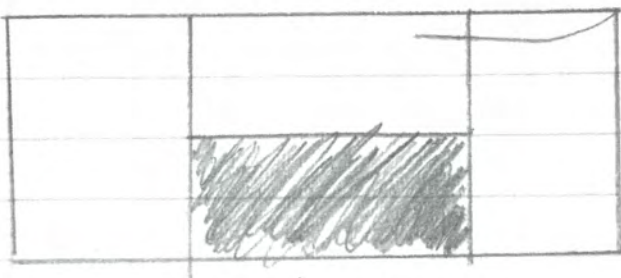
16		280	
50%	8 ✓	10%	28 ✓
n^2	64 ✓	$\times \frac{1}{9}$	4 ✓
+6	70 ✓	$\times 9$	36 ✓
$\times 4$	280 ✓	\sqrt{n}	6 ✓
✓		$\times 8$	48 ✓

Problem 3

1000		11	
25%	250	$\times 8$	88 ✓
$\frac{1}{2}$	125	$- 8$	80 ✓
$- 4$	121	$\times 4$	320 ✓
\sqrt{n}	11	5%	16 ✓
		\sqrt{n}	4 ✓

Problem 4

This large rectangle is made from 4 smaller rectangles each measuring 2 cm x 4 cm



Statements

1. Perimeter of small rectangle is 12 cm ✓
2. Perimeter of large rectangle is 48 cm ✓
3. Area of rectangle is 24 cm² x 32 cm

1. Factors of 28

28

1 ✓
2 ✓
4 ✓
7 ✓
14 ✓
28 ✓

2. 6th multiple of 9 = 54 ✓

3. bill = £18 = Shop 1 £237 = Shop 2 Total = 418 ✓

4. ~~1-82~~ × 1-63

5. 1-0-2186 = ~~0-8924~~ × 0-715

6. 0-785 = 0-79 ✓

7. 2-347 = 2-3 ✓

8. $18 - 15 \div 3 = 3 \div 3 = 1$ x -13

9. grams in 7-3 kg = 7300g ✓

10. 0-8l = 800ml ✓

11. $\frac{1}{4}$ in $7\frac{1}{4}$ = 2 ✓

12. $9 \div 0.5 = 18$ ✓

Wen Hinks

13. $0.08 \times 0.7 = 0.056 \times 0.56$

14. 20% as a fraction = $\frac{1}{5}$ ✓

15. $36 \overline{) 72} \times 72$

3	24	60
6	420	12

 = 2592 ✓

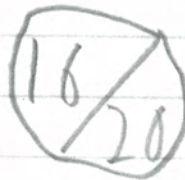
16. $0.3 \times 0.2 = 0.06$ ✓

17. 3% of 500 = 15 ✓

18. Area of triangle angle 1 = 7cm angle 2 = 4cm = $28\text{cm}^2 \div 2 = 14\text{cm}^2$ ✓

19. $15.99600 \times 5 = 79.98000$ ✓
 0.942 ✓

20. $(65) \times 78 = 5294$



~~*A*|H0~~

~~***A|H000~~

~~* 1 0 0~~

* = 00

(0 8 1 (5 5 1 6 1 8 0) x

(3 ? ? ? ? ? ? ?) x

0811881180

5		
1		
2		
+ 8 8 8		

1	4	8
2	1	4
4	2	6
8 8 8		

1	7	8
2	5	6
4	5	4
8 8 8		

1	8	7
2	6	5
4	4	5
8 8 8		

1	4	9
2	5	9
3	6	9
7 7 7		
1	2	

		9
		9
		9
7		
2		

	8	9
	1	7
	7	5
7 6		
1		

1	8	5
1	8	7
2	9	4
6 6 6		
2	1	

1. 380 ✓

2. 15 ✓

3. 20% ✓

4. 9.1 ✓

5. 0.65mm ✓

6. 9.35 ✓

$$(15 \times 9 = 135) \times$$

$$(38 \times 20 = 760) \times$$

$$(47 \times 42 = 1614) \times$$

$$47 \times 31 \times 24 = 24028)$$

$$\begin{array}{r} (24028) \\ + 1614 \\ + 0760 \\ + 0135 \\ \hline 26537 \end{array} \quad \times$$

$$(9 \begin{array}{|c|c|c|} \hline 1 & 5 & \\ \hline 9 & 4 & 5 \\ \hline \end{array} = 54) \times (\begin{array}{|c|c|c|} \hline 2 & 0 & \\ \hline 3 & 6 & 0 \\ \hline 8 & 1 & 6 \\ \hline \end{array} = 22) \times$$

$$\begin{pmatrix} 4 & 16 & 8 \\ 7 & 28 & 14 \end{pmatrix} = 66 \times$$

✓ $9 \begin{array}{|c|c|} \hline 15 \\ \hline \end{array} = 135 \checkmark$

$$\begin{array}{r} 20 \\ 3 \overline{) 600} \\ 8 \overline{) 160} \end{array} = 760 \checkmark$$

$$\begin{array}{r} 47 \\ 4 \begin{array}{|c|c|} \hline 1600 & 80 \\ \hline \end{array} \\ 7 \begin{array}{|c|c|} \hline 280 & 14 \\ \hline \end{array} = 1974 \checkmark \end{array}$$

$$\begin{array}{r} 47 \\ 3 \overline{) 1200210} \\ 1 \overline{) 407} = 1457 \end{array}$$

$\begin{array}{r} 20000 \\ + 20000 \\ \hline 40000 \end{array}$

200 00

16000

8000

2000

1000

2800

1400

$$\begin{array}{r} 91200 \\ 21 \end{array}$$

21

$$\begin{array}{r} 34968 \\ 01974 \\ 00760 \\ 00135 \\ \hline 37837 \\ 221 \end{array}$$

01974

00760

00135

37837

221

37837

7, 156, 264, 527

Nearest billion = 7 billion

Nearest million - 7,156 million

Increase in population:-

19% in China, how many is it?

Everyone in line how long. 42

