

The Lowry Academy



The best in everyone™

Name: _____

Year 8

End of Year Assessment Revision Resource

Part 1: Topics & Sparx Clips

Part 2: Practice Questions

Topics & Sparx Clips

Topic	Strand	Sparx clips
Indices	Number	M135, M608
Primes	Number	M322, M823, M108, M365, M227, M698
Rounding	Number	M111, M431, M994, M131, M878
Fractions	Number	M939, M410, M671, M601, M835, M931, M157, M197, M110, M265
Negative Number Review	Number	M106, M288
Linear equations	Algebra	M707, M509, M387, M554
Linear equations in context	Algebra	M813, M795, M531, M957
Coordinates and basic graphs	Geometry & Measure	M618, M622, M797
Units of measurement	Geometry & Measure	M892, M627, M515, M772, M530, M761, M728
Angles in Parallel Lines	Geometry & Measure	M818, M163, M606, M351, M679, M393
Interior and Exterior angles	Geometry & Measure	M653
Circumference	Geometry & Measure	M595, M169
Proportional reasoning	Ratio, Proportion & Rates of Change	M478, M681
Fractions, decimals and percentages	Number	M264, M553, M437, M528, M905, M533, M476, M528
Ratio	Ratio, Proportion & Rates of Change	M885, M543, M267, U921, M801, M525
Area of circles and trapezia	Geometry & Measure	M705, M231, M430, M303, M269, M996
Presenting and interpreting data	Statistics	M945, M460, M738, M140, M183, M574, M165
Averages	Statistics	M940, M934, M328, M841, M440

Practice Questions

Q1.

- (a) I think of a number.

I **double** my number and the answer is **178**

What is my number?

Answer _____

[1 mark]

- (b) I think of a different number.

I **double** my number, then I **double again**.

The answer is **312**

What is my number?

Answer _____

[1 mark]

Q2.

- (a) Write a number that is **bigger than one thousand** but **smaller than one thousand one hundred**.

Write the number in figures not words.

Answer _____

[1 mark]

- (b) Now write a **decimal** number that is **bigger than zero** but **smaller than one**.

Answer _____

[1 mark]

Q3.

Complete the table.

Fraction	Decimal	Percentage
$\frac{3}{4}$		75%
$\frac{1}{5}$	0.2	
	0.1	10%

[3 marks]**Q4.**In a school, lessons are **55 minutes** long.

- (a) A maths lesson
- starts**
- at 9:15am

At what time does the lesson **end**?

Answer _____ : _____ am

[1 mark]

- (b) A history lesson
- ends**
- at 3:30pm

At what time does the lesson **start**?

Answer _____ : _____ pm

[1 mark]

- (c) Lunch break is
- $1\frac{1}{4}$
- hours long.

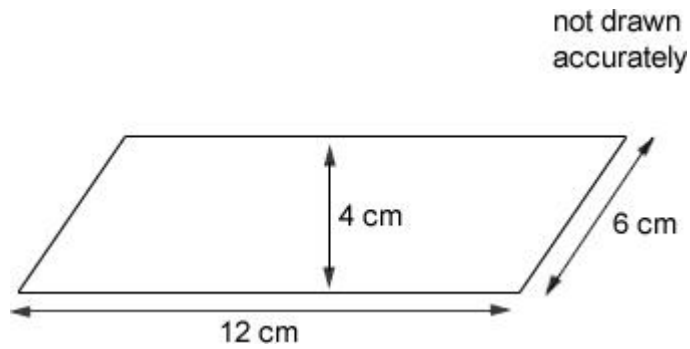
Lunch break **ends** at 1:30pmAt what time does it **start**?

Answer _____ : _____ pm

[1 mark]

Q5.

Calculate the area of this parallelogram.

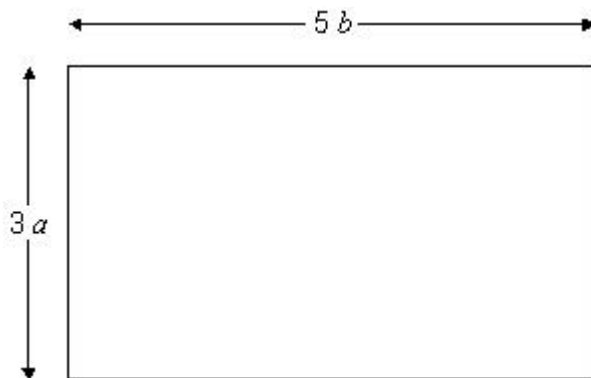


Answer _____ cm²
[1 mark]

Q6.

(a) The diagram shows a rectangle.

Its dimensions are $3a$ by $5b$



Write **simplified expressions** for the area and the perimeter of this rectangle.

Area: _____
[1 mark]

Perimeter: _____
[1 mark]

(b) A different rectangle has **area $12a^2$** and **perimeter $14a$** .
What are the dimensions of this rectangle?

Dimensions: _____ by _____
[1 mark]

Q10.

Here is a list of numbers.

6 9 11 27 30 36 90

From the list, write down

- (a) the multiple of 12

Answer _____
[1 mark]

- (b) the two factors of 30

Answer _____ and _____
[2 marks]

- (c) the prime number

Answer _____
[1 mark]

- (d) the cube number

Answer _____
[1 mark]

Q11.

- (a) What is the highest common factor (HCF) of 18 and 24?

Answer _____
[2 marks]

- (b) The least common multiple (LCM) of two numbers is 20

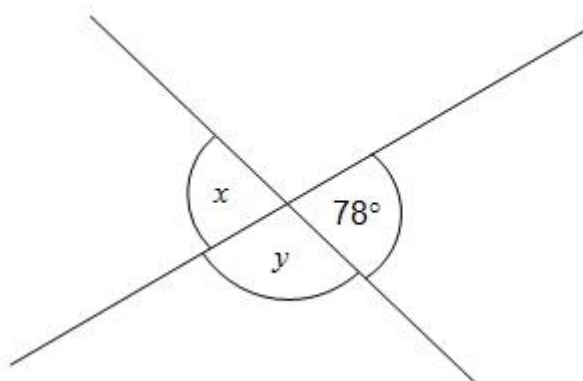
Give an example of what the numbers could be.

Answer _____ and _____
[2 marks]

Q12.

What are the sizes of the angles marked x and y ?

Not drawn accurately



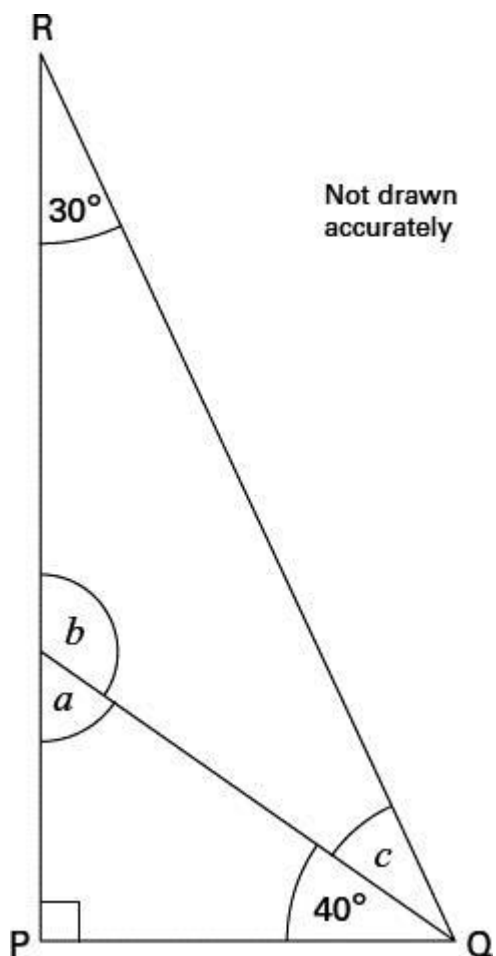
$x =$ _____ degrees

$y =$ _____ degrees

[3 marks]

Q13.

The diagram shows triangle PQR.



Work out the sizes of angles a , b and c

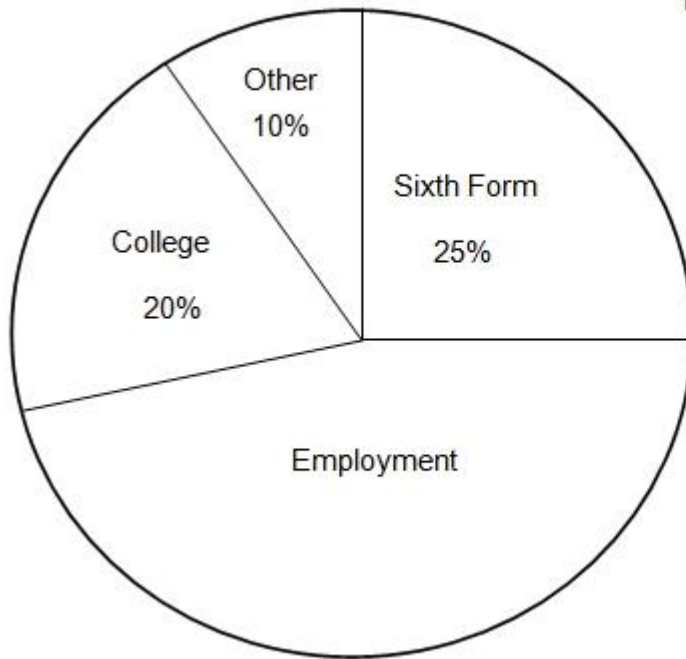
$a =$ _____ $^{\circ}$ $b =$ _____ $^{\circ}$ $c =$ _____ $^{\circ}$

[3 marks]

Q14.

The pie chart shows the destinations of 300 students from Year 11 in 1980

Not drawn accurately



- (a) Work out the **percentage** of the students who went into employment.

Answer _____ %

[2 marks]

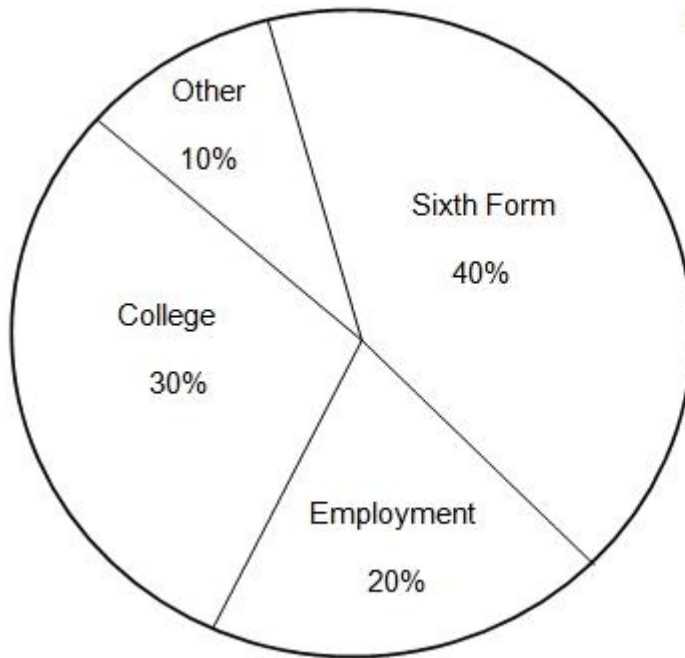
- (b) Work out the number of students who went to college.

Answer _____

[2 marks]

- (c) This pie chart shows the destinations of 300 students from Year 11 in 2012

Not drawn accurately



Which was the most popular destination in 2012?

Answer _____

[1 mark]

- (d) By comparing the pie charts, write down two changes in the destinations of students from 1980 to 2012

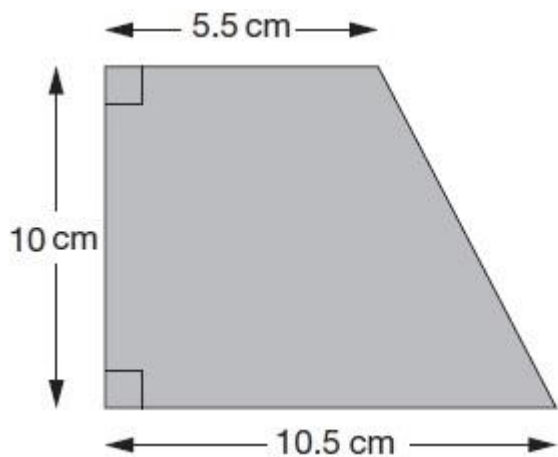
Change 1 _____

Change 2 _____

[2 marks]

Q15. CALCULATOR ALLOWED

Here is a trapezium with a height of 10 centimetres.



Not
actual
size

The parallel sides are 5.5 cm long and 10.5 cm long.

Find the **area** of the trapezium.

You **must** show your working.

Answer _____ cm²
[2 marks]

Q16.

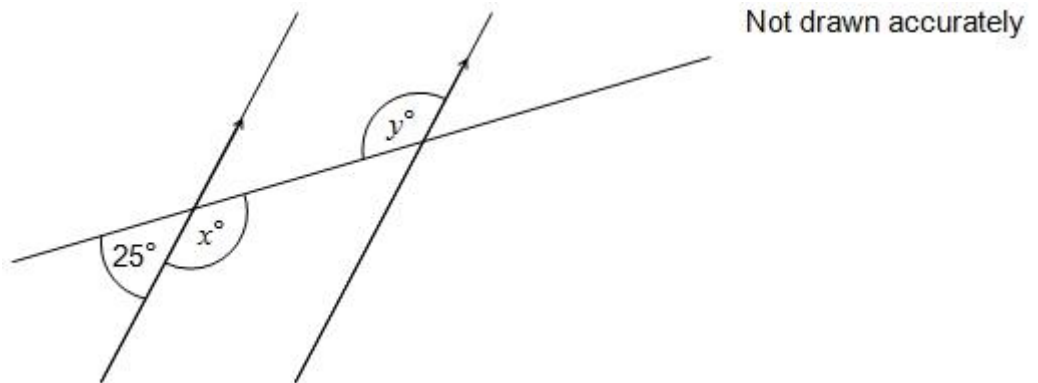
- (a) Share £48 in the ratio 1 : 3

£ _____ : £ _____

[2 marks]

Q17.

A straight line crosses two parallel straight lines.



- (a) What is the size of the angle marked x ?

Answer _____ degrees

[2 marks]

Q18.

- (a) There are two children in the Smith family.
The **range** of their ages is **exactly 7 years**.

What could the ages of the two children be?
Give an example.

Answer _____ and _____

[1 mark]

- (b) There are two children in the Patel family.
They are twins of the **same age**.

What is the **range** of their ages?

Answer _____ years

[1 mark]

Q19.

Multiply out and simplify $5(x + 3) - 3(x + 2)$

Answer _____

[2 marks]

Q20.

(a) Calculate $\frac{5}{6} \times \frac{3}{5}$

You **must** show your working.

Write your answer as a fraction in its **simplest form**.

[2 marks]

(b) Four-fifths of the members of a club are female.

Three-quarters of these females are over 20 years old.

What fraction of the members of the club are females over 20 years old?

You **must** show your working.

[2 marks]

Q21.

Solve this equation.

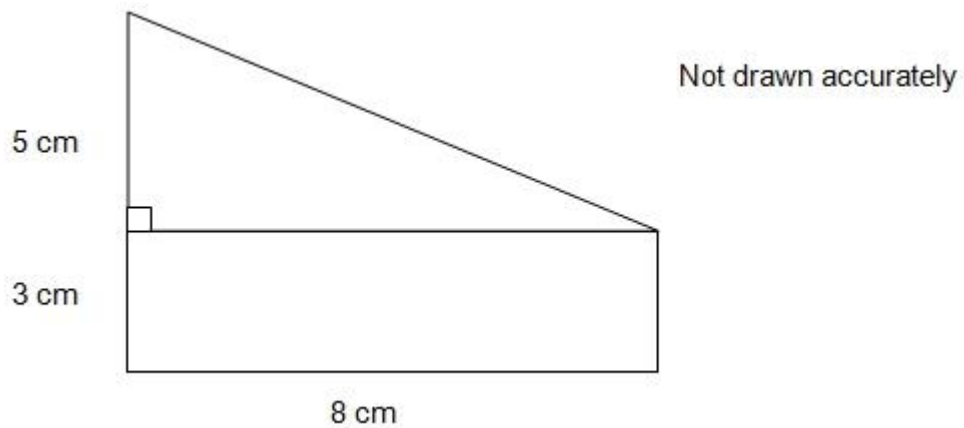
$$2(2n + 5) = 12$$

$n =$ _____

[2 marks]

Q22.

A shape is made with a triangle and a rectangle

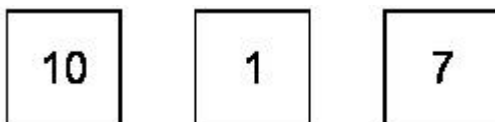


Work out the area of the whole shape.

[4 marks]

Q23.

The **mean** of these numbers is 6



Write three numbers that have a mean of 7

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[1 mark]

Q24.

- (a) Simplify the ratio 12 : 9

Answer _____

[1 mark]

- (b) In a class, the ratio of girls to boys is 3 : 1
There are 18 girls in the class.

How many boys are there?

Answer _____

[2 marks]

Q25.

A restaurant bill is £132

A 10% service charge is included in the bill.

How much is the service charge?

£ _____

[3 marks]

Q26.

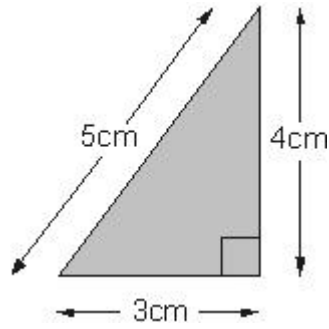
Write 240 as a product of its prime factors

Answer _____

[2 marks]

Q27.

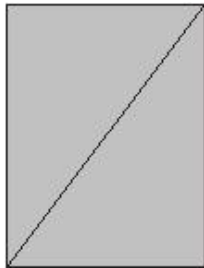
I have some triangular tiles like this:



Not drawn accurately

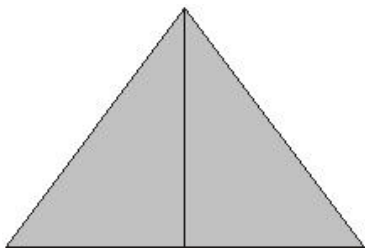
I use two of these tiles to make different shapes.

For each shape, work out its **perimeter**.



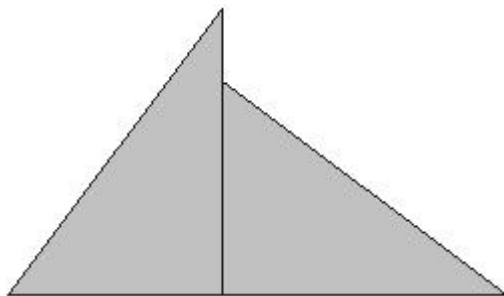
The perimeter of the rectangle is:

Answer _____ cm
[1 mark]



The perimeter of the isosceles triangle is:

Answer _____ cm
[1 mark]



The perimeter of the quadrilateral is:

Answer _____ cm
[1 mark]

Q28.

Work out the following.

$$1706 + 185$$

Answer _____ [1 mark]

$$576 - 83$$

Answer _____ [1 mark]

$$65 \times 9$$

Answer _____ [1 mark]

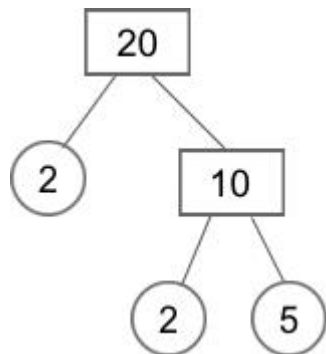
$$154 \div 7$$

Answer _____ [1 mark]

Q29.

Any number can be written as a product of its prime factors,
for example:

$$20 = 2 \times 2 \times 5$$



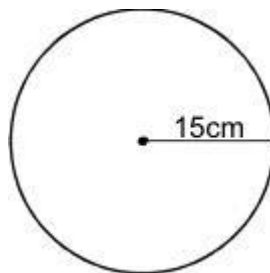
Write 90 as a product of its prime factors.

$$90 = \underline{\hspace{2cm}}$$

[1 mark]

Q30. CALCULATOR ALLOWED

- (a) A circle has a radius of 15cm.
Calculate the **area** of the circle.
You **must** show your working.



Answer _____ cm²
[2 marks]

- (b) A different circle has a **circumference** of 120 cm.
What is the **radius** of the circle?
You **must** show your working.

Answer _____ cm
[2 marks]

Q31.

Work out the following.

$$1.2 \times 6$$

Answer _____

[1 mark]

$$1.2 \div 6$$

Answer _____

[1 mark]

Q32.

Work out

$$\frac{1}{4} + \frac{1}{3} =$$

$$\frac{3}{5} - \frac{1}{15} =$$

[3 marks]

Q33.

P and Q are vertices of a regular polygon.

The exterior angle at Q is 30°



Not drawn
accurately

How many sides does the polygon have?

Answer _____

[2 marks]

Answers

1	(a) 89 (b) 78
2	(a) A value that is greater than 1000, but less than 1100 eg <ul style="list-style-type: none">• 1001• 1099 (b) A decimal that is greater than 0, but less than 1 eg <ul style="list-style-type: none">• 0.5• 0.12
3	(0).75 <i>Allow 0.750 etc</i> 20% $\frac{1}{10}$
4	(a) 10:10 (b) (0)2:35 (c) 12:15
5	48 cm ²
6	(a) Correct simplified expression for the area, eg <ul style="list-style-type: none">• $15ab$ Correct simplified expression for the perimeter, eg <ul style="list-style-type: none">• $6a + 10b$ (b) $4a$ and $3a$
7	12 36 <p style="text-align: right;">1</p>
8	(a) $4x + 8$ (b) $x^2 - 6x$ <p style="text-align: right;">B1</p>

9	<p>(a) Claire</p> <p>(b) The names Claire then Tom</p> <p style="text-align: right;">1</p>
10	<p>(a) 36</p> <p>(b) 6 and 30</p> <p>(c) 11</p> <p>(d) 27</p>
11	<p>(a) 6</p> <p>(b) Any pair of factors of 20 e.g. 1 and 20 or 2 and 20 or 4 and 20 etc</p>
12	102
13	<p>Show angle <i>a</i> as 50</p> <p>Show angle <i>b</i> as 130</p> <p>Show angle <i>c</i> as 20</p>
14	<p>(a) 45</p> <p>(b) 60</p> <p>(c) Sixth Form</p> <p>(d) Any correct change</p> <p style="text-align: center;"><i>E.g. Sixth Form now the biggest More go to college More stay on at school Fewer go into employment</i></p>
15	80
16	(a) 12 : 36
17	(a) 155
18	<p>(a) Two ages with a difference of 7 years</p> <p>eg</p> <ul style="list-style-type: none"> • 1 and 8 • 7 and 14

	<ul style="list-style-type: none"> • 7 and 0 • 20 and 13 <p>(b) 0</p>
19	$2x + 9$
20	<p>(a) $\frac{1}{2}$</p> <p>(b) $\frac{3}{5}$ or equivalent fraction or decimal</p>
21	$\frac{1}{2}$ or equivalent
22	44
23	<p>Any three numbers that total 21, eg</p> <ul style="list-style-type: none"> • 3, 4, 14 • 7, 7, 7
24	6
25	12
26	$240 = 2^4 \times 3 \times 5$
27	<p>14</p> <p>16</p> <p>18</p>
28	<p>1891</p> <p>493</p> <p>585</p> <p>22</p>

29	$2 \times 3 \times 3 \times 5$ <i>Numbers can be written in any order</i>
30	(a) For $2m - 710$ or a value between 706 and 707.2 inclusive (b) For $2m -$ a value between 19 and 19.11 inclusive
31	7.2 <i>Or an equivalent fractions or decimals</i> 0.2
32	$\frac{7}{12}$ or equivalent $\frac{8}{15}$ or equivalent
33	12