

The Lowry Academy



The best in everyone™

Name: \_\_\_\_\_

## Year 7

End of Year Assessment Revision Resource

Part 1: Topics & Sparx Clips

Part 2: Practice Questions

# Topics & Sparx Clips

Topic	Strand	Sparx clips
Place value and Number sense	Number	M763, M704, M522, M527, M135
Addition and Subtraction	Number	M928, M429, M347, M152
Perimeter	Geometry & Measure	M920, M635, M690
Rounding & Estimation (in real life situations)	Number	M111, M431, M878
Multiplication and Division	Number	M113, M911, M187, M803, M462, M354, M873, M262
Factors and Multiples	Number	M227, M823, M698, M322
Area of rectangles and triangles and parallelograms	Geometry & Measure	M900, M390, M291, M610, M269, M996
Fractions as part of a whole	Number	M158, M410, M671, M939, M601
Fraction - addition & subtraction	Number	M835, M931
Fractions - compare and order	Number	M335, M958
Fraction of an amount	Number	M695
Order of operations	Number	M521
Basic rules of algebra	Algebra	M106, M830, M813, M795, M531
Expand and factorise	Algebra	M288, M237, M792, M100
Substitution	Algebra	M417, M327, M208, M979
Angles	Geometry & Measure	M502, M541, M780, M331, M818, M351, M679, M319
Polygons	Geometry & Measure	M276
Symmetry and reflection	Geometry & Measure	M523
Coordinates	Geometry & Measure	M618

# Practice Questions

**Q1.**

Here is a list of numbers.

7      8      12      28      30      36      75

**From the list**, write down

(a) the multiple of 15

Answer \_\_\_\_\_  
[1 mark]

(b) the two factors of 60

Answer \_\_\_\_\_ and \_\_\_\_\_  
[2 marks]

(c) the prime number

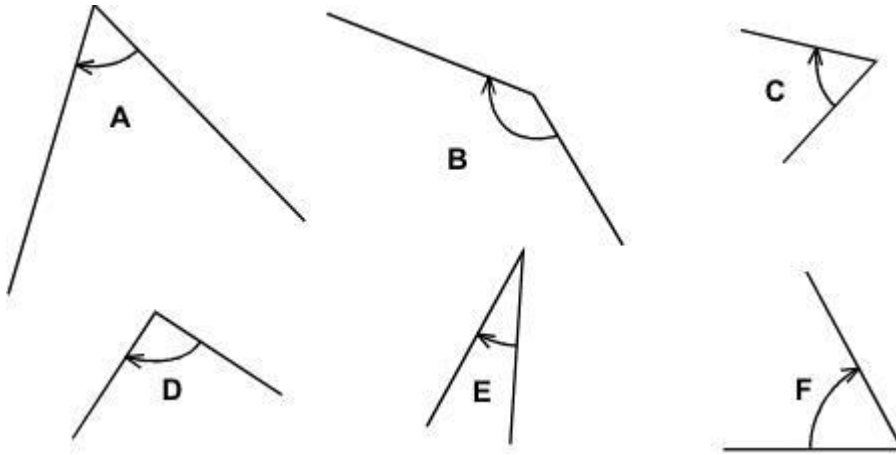
Answer \_\_\_\_\_  
[1 mark]

(d) the square number

Answer \_\_\_\_\_  
[1 mark]

**Q2.**

Look at these six angles.



(a) Which is the **smallest angle**?

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[1 mark]

(b) One of the angles is a **right angle**.  
Which is a **right angle**?

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[1 mark]

(c) One of the angles is an **obtuse angle**.  
Which is an **obtuse angle**?

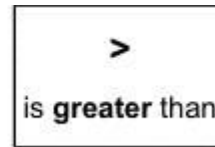
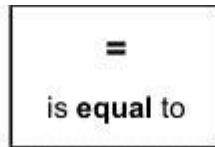
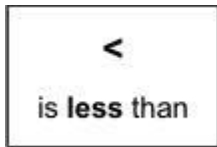
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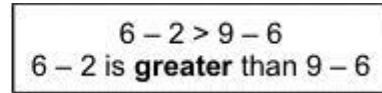
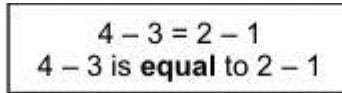
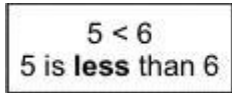
[1 mark]

**Q3.**

Look at these three signs:



Examples:



Put the correct **sign**,  $<$  or  $=$  or  $>$ , into each number sentence.

(a)  $8 + 2$  \_\_\_\_\_  $7 + 6$

[1 mark]

(b)  $6 - 3$  \_\_\_\_\_  $1 + 2$

[1 mark]

(c)  $0$  \_\_\_\_\_  $-3$

[1 mark]

(d)  $-7$  \_\_\_\_\_  $-2$

[1 mark]

(e)  $3 - 2$  \_\_\_\_\_  $-5$

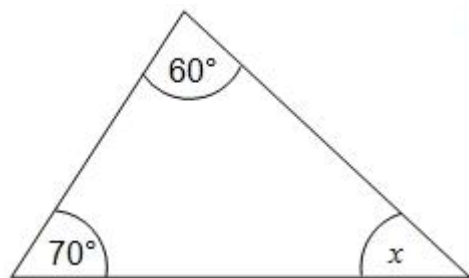
[1 mark]

(f)  $5 - 5$  \_\_\_\_\_  $4 - 6$

[1 mark]

**Q4.**

- (a) Work out the size of the angle marked  $x$



Not drawn accurately

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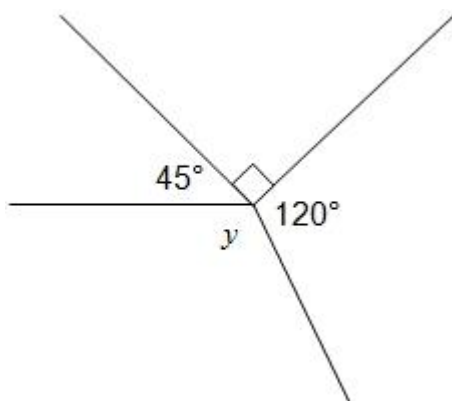
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Answer \_\_\_\_\_ degrees

**[2 marks]**

- (b) Work out the size of the angle marked  $y$



Not drawn accurately

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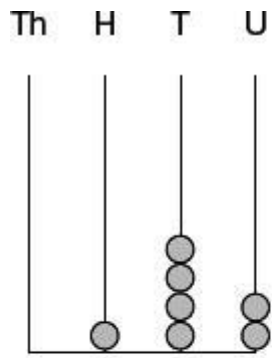
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Answer \_\_\_\_\_ degrees

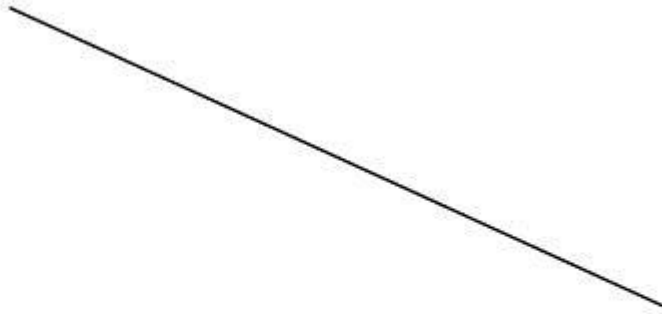
**[2 marks]**

**Q5.**

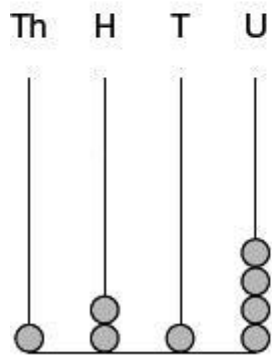
Join each abacus to the number it shows. One is done for you.



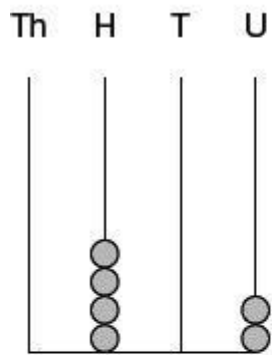
1214



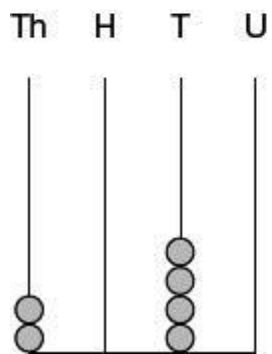
142



2040



204

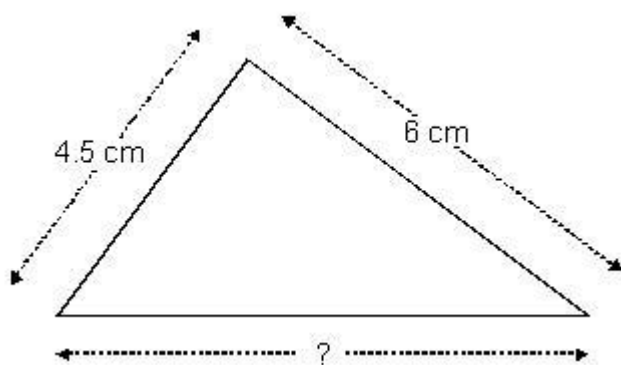


402

[2 marks]

**Q6.**

Here is a triangle.



(a) Measure the length of the longest side.

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Answer \_\_\_\_\_

[1 mark]

(b) What is the **perimeter** of this triangle?

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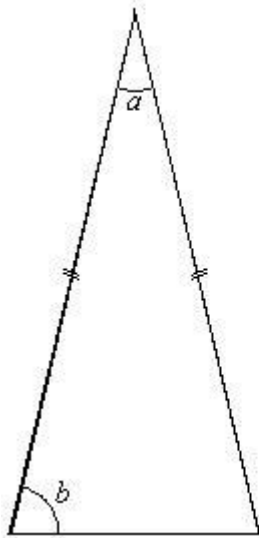
Answer \_\_\_\_\_

[1 mark]



**Q7.**

The drawing shows an isosceles triangle.



Not drawn accurately

- (a) When angle  $b$  is  $70^\circ$ , what is the size of angle  $a$ ?

You **must** show your working.

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Answer \_\_\_\_\_<sup>°</sup>

**[2 marks]**

- (b) When angle  $a$  is  $70^\circ$ , what is the size of angle  $b$ ?

You **must** show your working.

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Answer \_\_\_\_\_<sup>°</sup>

**[2 marks]**

**Q8.**

- (a) Factorise  $10x - 15$

Answer \_\_\_\_\_  
[1 mark]

- (b) Factorise  $x^2 + 8x$

Answer \_\_\_\_\_  
[1 mark]

**Q9.**

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

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Answer \_\_\_\_\_  
[2 marks]

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

Give an example of what the numbers could be.

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Answer \_\_\_\_\_ and \_\_\_\_\_  
[2 marks]

**Q10.**

Write the missing numbers.

$$48 \div (19 - \underline{\hspace{2cm}}) = 4$$

[1 mark]

$$\underline{\hspace{2cm}} + 6 \times 8 = 56$$

[1 mark]

**Q11.**

Write in the missing digit.

The answer **does not** have a remainder.

$$\begin{array}{r} 26 \\ 3 \overline{) \square 8} \end{array}$$

[1 mark]

**Q12.**

(a) Work out  $68 \times 28$

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Answer \_\_\_\_\_

[3 marks]

(b) Work out  $188.4 \div 6$

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Answer \_\_\_\_\_

[2 marks]

**Q13.**

Multiply out  $7(x - 1)$

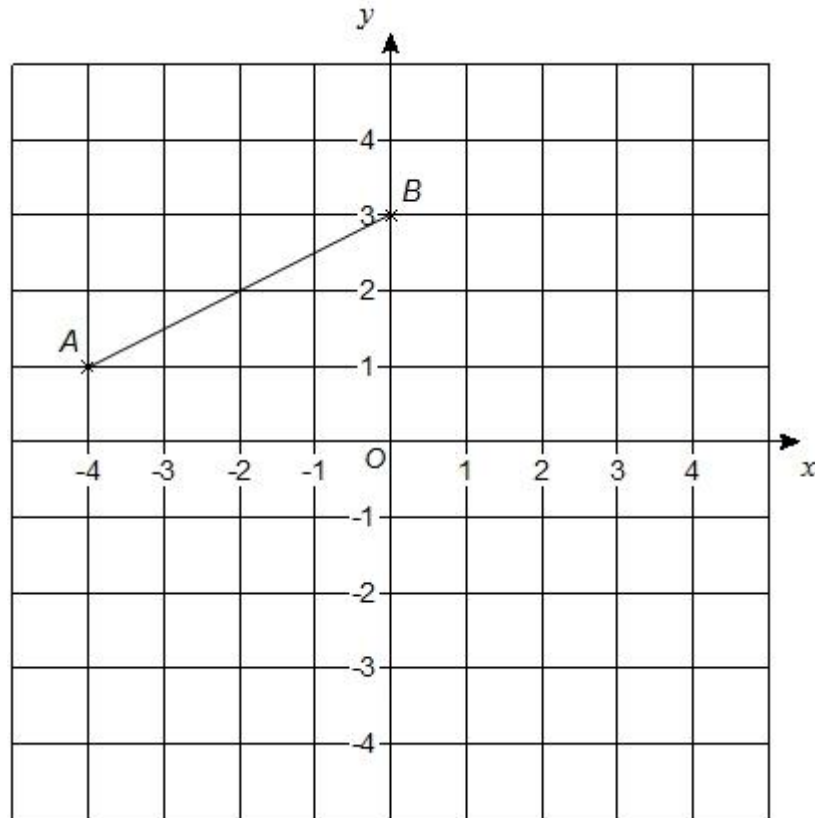
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Answer \_\_\_\_\_

[1 mark]

**Q14.**



(a) Write down the coordinates of point A.

Answer ( \_\_\_\_\_ , \_\_\_\_\_ )  
[1 mark]

(b) Point C lies on the line AB.

The  $x$ -coordinate of C is  $-3$

Mark point C on the grid.

[1 mark]

(c) The coordinates of the point  $(0, 3)$  add up to 3

Write down a point on the line which has coordinates that add up to zero.

Answer ( \_\_\_\_\_ , \_\_\_\_\_ )  
[1 mark]

**Q15.**Work out  $5.2 \times 7$ 


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Answer \_\_\_\_\_

**[2 marks]****Q16.**Use  $a = 7$  and  $b = 28$  to work out the value of these expressions.

The first one is done for you.

$$a + b = \underline{\hspace{2cm}35\hspace{2cm}}$$

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

**[1 mark]**

$$\frac{b}{a} = \underline{\hspace{2cm}}$$

**[1 mark]**

$$(a + b)^2 = \underline{\hspace{2cm}}$$

**[1 mark]****Q17.**

Write the missing numbers.

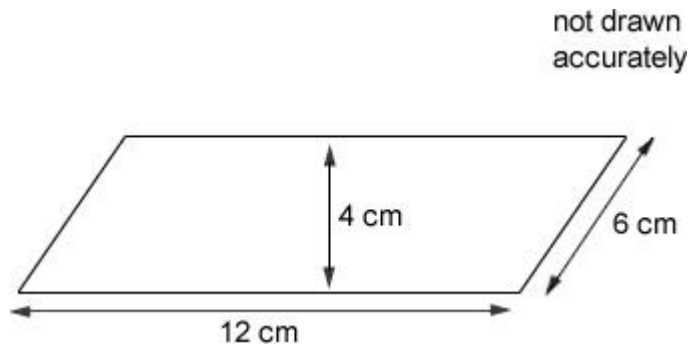
One is done for you.

Improper fraction	Mixed number
$\frac{7}{4}$	$1\frac{3}{4}$
$\frac{\square}{2}$	$5\frac{1}{2}$
$\frac{17}{5}$	$3\frac{\square}{5}$

**[2 marks]**

**Q18.**

Calculate the area of this parallelogram.



Answer \_\_\_\_\_ cm<sup>2</sup>  
[1 mark]

**Q19.**

Write these expressions as simply as possible.

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$$9 - 3k + 5k = \underline{\hspace{2cm}}$$

[1 mark]

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$$k^2 + 2k + 4k = \underline{\hspace{2cm}}$$

[1 mark]

**Q20.**

Here are some signs.



*A*



*B*



*C*



*D*



*E*



*F*



*G*



*H*

Complete the table to show the symmetry of the signs.

	Line Symmetry	Rotational Symmetry
<i>A</i>	✓	✓
<i>B</i>	X	✓
<i>C</i>		
<i>D</i>		
<i>E</i>		
<i>F</i>		
<i>G</i>		
<i>H</i>		

[3 marks]

**Q21.**

Put these numbers in order, starting with the smallest.

0.4       $\frac{1}{3}$        $\frac{1}{2}$       0.15       $\frac{1}{4}$

Answer \_\_\_\_\_

**[3 marks]**

**Q22.**

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

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Answer \_\_\_\_\_

**[2 marks]**



**Q23.**

Link each shape to the number of lines of symmetry.

The first one has been done for you.

1

2

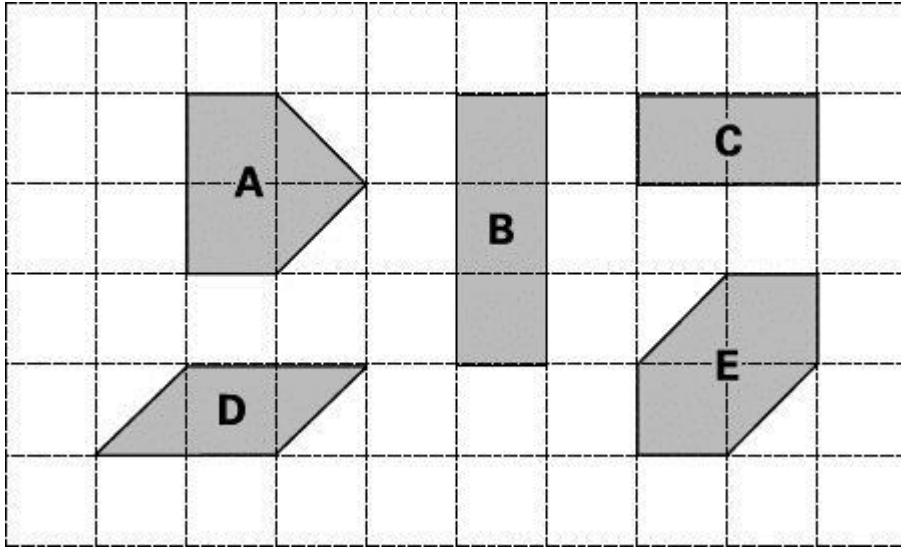
3

4

[3 marks]

**Q24.**

The diagram shows some shapes on a 10 by 6 square grid.



- (a) Which **two** shapes have the **same area** as shape **A**?

Answer \_\_\_\_\_

[1 mark]

- (b) Which **two** shapes have the **same perimeter** as shape **A**?

Answer \_\_\_\_\_

[1 mark]

- (c) How many of shape **C** would you need to cover a 10 by 6 square grid?

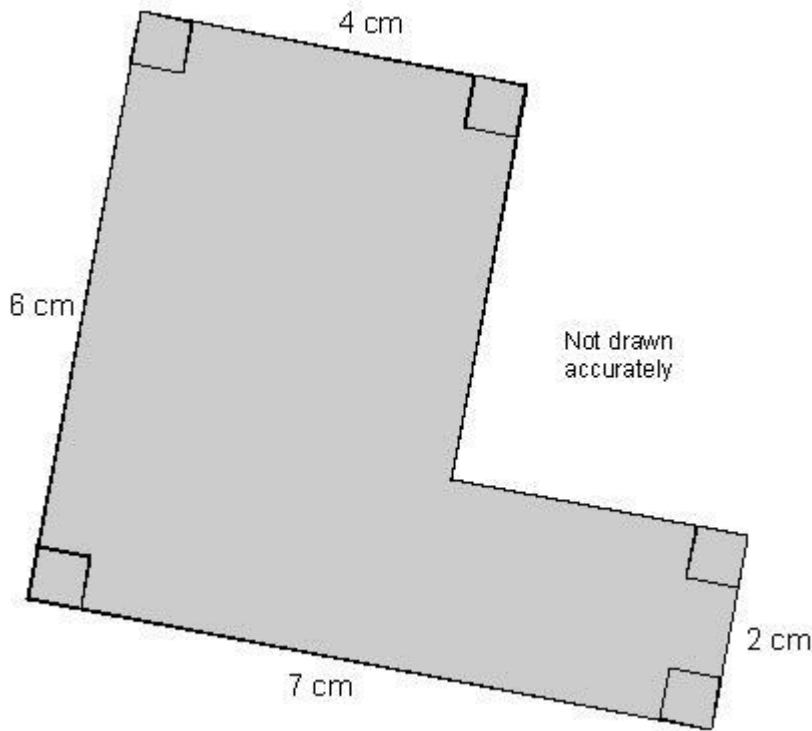
Answer \_\_\_\_\_

[1 mark]

**Q25.**

What is the area of this L-shape?

You **must** show your working.



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Answer \_\_\_\_\_ cm<sup>2</sup>  
[2 marks]

**Q26.**

**Three** prime numbers add up to 30

Give an example of what the three prime numbers could be.

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Answer \_\_\_\_\_ and \_\_\_\_\_ and \_\_\_\_\_  
[2 marks]

**Q27.**

Circle the two numbers which round to 70

63

75

73

67

76

[1 mark]

**Q28.**

Fill in the missing numbers.

$\frac{1}{2}$  of 20 =  $\frac{1}{4}$  of \_\_\_\_\_

[1 mark]

$\frac{3}{4}$  of 100 =  $\frac{1}{2}$  of \_\_\_\_\_

[1 mark]

$\frac{1}{3}$  of 60 =  $\frac{2}{3}$  of \_\_\_\_\_

[1 mark]

**Q29.**

(a) Work out  $74 \times 53$

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Answer \_\_\_\_\_

[2 marks]

(b) Work out  $3828 \div 12$

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Answer \_\_\_\_\_

[1 mark]

**Q30.**

Work out

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

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

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**[3 marks]****Q31.**

The pupils in a class had a sponsored swim.

They collected **£429.24**

- (a) How much is £429.24 to the
- nearest hundred pounds**
- ?

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£ \_\_\_\_\_

**[1 mark]**

- (b) How much is £429.24 to the
- nearest ten pounds**
- ?

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£ \_\_\_\_\_

**[1 mark]**

**Q32.**

A rectangle has an **area** of **24 cm<sup>2</sup>**

How long could the sides of the rectangle be?

Give three **different** examples.

Answer \_\_\_\_\_ cm and \_\_\_\_\_ cm

Answer \_\_\_\_\_ cm and \_\_\_\_\_ cm

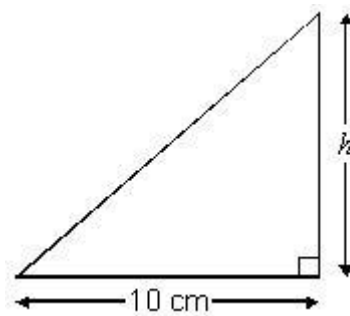
Answer \_\_\_\_\_ cm and \_\_\_\_\_ cm

**[2 marks]**

**Q33.**

The **area** of this triangle is **40 cm<sup>2</sup>**

What is the **height**, *h*, of the triangle?



Not drawn accurately

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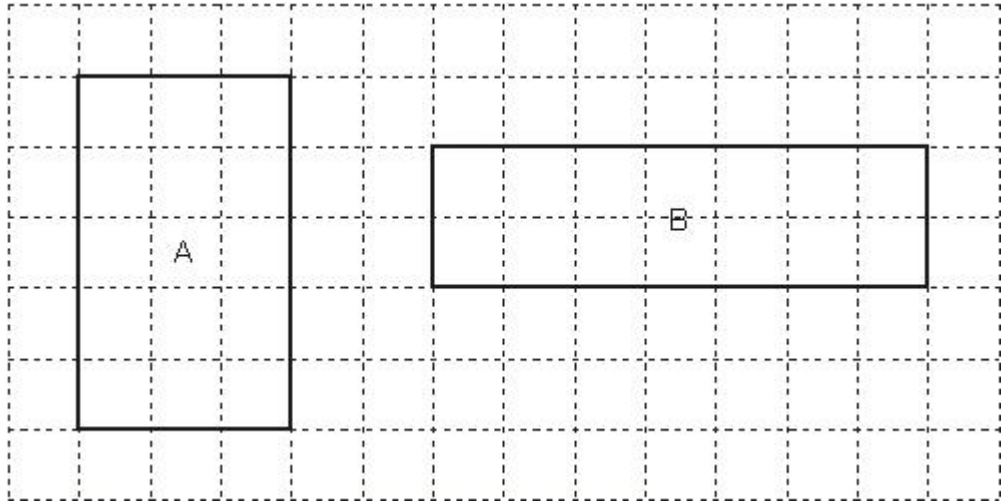
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Answer \_\_\_\_\_ cm

**[1 mark]**

**Q34.**

Look at the two rectangles on the centimetre square grid.



- (a) Which rectangle has the **larger perimeter**?

Tick (✓) A or B.

A

B

Explain how you know.

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[1 mark]

- (b) Which rectangle has the **larger area**?

Tick (✓) A or B.

A

B

Explain how you know.

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[1 mark]

**Q35.**

Work out

$$374 \times 23$$

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Answer \_\_\_\_\_

**[2 marks]**



## Answers

<b>1</b>	<p>(a) 75</p> <p>(b) 12 and 30</p> <p>(c) 7</p> <p>(d) 36</p>
<b>2</b>	<p>(a) angle E</p> <p>(b) angle D</p> <p>(c) angle B</p>
<b>3</b>	<p>(a) Indicates <math>8 + 2 &lt; 7 + 6</math></p> <p>(b) Indicates <math>6 - 3 = 1 + 2</math></p> <p>(c) Indicates <math>0 &gt; -3</math></p> <p>(d) Indicates <math>-7 &lt; -2</math></p> <p>(e) Indicates <math>3 - 2 &gt; -5</math></p> <p>(f) Indicates <math>5 - 5 &gt; 4 - 6</math></p>
<b>4</b>	<p>(a) 50</p> <p>(b) 105</p>
<b>5</b>	<p>The diagram shows four abacus and four numbers. The abacus represent the following values:</p> <ul style="list-style-type: none"> <li>Top-left abacus: 1214</li> <li>Top-right abacus: 142</li> <li>Bottom-left abacus: 2040</li> <li>Bottom-right abacus: 402</li> </ul> <p>The connections are as follows:</p> <ul style="list-style-type: none"> <li>The top-left abacus is connected to 142 by a dashed line.</li> <li>The top-right abacus is connected to 1214 by a solid line.</li> <li>The bottom-left abacus is connected to 402 by a solid line.</li> <li>The bottom-right abacus is connected to 2040 by a solid line.</li> </ul>

<b>6</b>	(a) Value from 7.4 to 7.6 inclusive (your answer may be different depending on how big you printed your pack – ask an adult to check your answer) (b) Value from 17.9 to 18.1 inclusive (your answer may be different depending on how big you printed your pack – ask an adult to check your answer)
<b>7</b>	(a) 40 (b) 55
<b>8</b>	(a) $5(2x - 3)$ (b) $x(x + 8)$
<b>9</b>	(a) 6 (b) 1 and 20 <b>or</b> 2 and 20 <b>or</b> 4 and 20 etc (any pair of factors of 20)
<b>10</b>	7 8
<b>11</b>	$\begin{array}{r} 26 \\ 3 \overline{) 78} \end{array}$
<b>12</b>	(a) 1764 (b) 31.4
<b>13</b>	$7x - 7$
<b>14</b>	(a) -4, 1 (b) Marks point at (-3, 1.5) (c) -2, 2
<b>15</b>	36.4
<b>16</b>	196 4 1225
<b>17</b>	$\frac{\boxed{11}}{2}$ $3\frac{\boxed{2}}{5}$
<b>18</b>	48 cm <sup>2</sup>

<b>19</b>	$9 + 2k$ $k(k + 6)$ or $k^2 + 6k$																											
<b>20</b>	<table border="1"> <thead> <tr> <th></th> <th>Line Symmetry</th> <th>Rotational Symmetry</th> </tr> </thead> <tbody> <tr> <td><i>A</i></td> <td>✓</td> <td>✓</td> </tr> <tr> <td><i>B</i></td> <td>✗</td> <td>✓</td> </tr> <tr> <td><i>C</i></td> <td>✓</td> <td>✗</td> </tr> <tr> <td><i>D</i></td> <td>✗</td> <td>✗</td> </tr> <tr> <td><i>E</i></td> <td>✓</td> <td>✗</td> </tr> <tr> <td><i>F</i></td> <td>✓</td> <td>✓</td> </tr> <tr> <td><i>G</i></td> <td>✓</td> <td>✗</td> </tr> <tr> <td><i>H</i></td> <td>✓</td> <td>✗</td> </tr> </tbody> </table>		Line Symmetry	Rotational Symmetry	<i>A</i>	✓	✓	<i>B</i>	✗	✓	<i>C</i>	✓	✗	<i>D</i>	✗	✗	<i>E</i>	✓	✗	<i>F</i>	✓	✓	<i>G</i>	✓	✗	<i>H</i>	✓	✗
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<i>F</i>	✓	✓																										
<i>G</i>	✓	✗																										
<i>H</i>	✓	✗																										
<b>21</b>	$0.15, \frac{1}{4}, \frac{1}{3}, 0.4, \frac{1}{2}$																											
<b>22</b>	$2x + 9$																											
<b>23</b>	Link rectangle to 2 trapezium to 1 equilateral triangle to 3																											
<b>24</b>	(a) B and E in either order (b) D and E in either order (c) 30																											
<b>25</b>	30																											
<b>26</b>	2 and 5 and 23																											
<b>27</b>	Identifies 73 and 67																											
<b>28</b>	40 150 30																											
<b>29</b>	(a) 3922 (b) 319																											

<b>30</b>	$\frac{7}{12}$ or equivalent  $\frac{8}{15}$ or equivalent
<b>31</b>	(a) £ 400  (b) £ 430
<b>32</b>	Three different pairs of positive numbers with a product of 24  eg • 1            24 2            12 3            8 • 4            6 1.5        16 5            4.8
<b>33</b>	8
<b>34</b>	(a) B and correct explanation eg • The perimeter of B is 18 but the perimeter of A is 16 • B is $2 \times 9$ but A is $2 \times 8$ • $2(5 + 3)$ is less than $2(2 + 7)$ • B's perimeter is 2 more than A's  (b) A and correct explanation eg • The area of A is 15 but the area of B is 14 • A is $5 \times 3$ but B is $7 \times 2$ • A's area is one more than B's
<b>35</b>	8602