

- 1 There are 31 days in January.
January 21st 2015 was a Wednesday.

What day of the week was February 8th 2015?

Answer [1]

- 2 The temperature in Berlin is -7°C and the temperature in Istanbul is -3°C .

(a) Write down how many degrees colder it is in Berlin than it is in Istanbul.

Answer(a) $^{\circ}\text{C}$ [1]

(b) Sydney is 23 degrees warmer than Berlin.

Write down the temperature in Sydney.

Answer(b) $^{\circ}\text{C}$ [1]

- 3 (a) A mass of 300 kg is increased by 8%.

Work out the increase in mass.

Answer(a) kg [1]

(b) Nelson scores 27 out of 40 in a history test.

Work out his score as a percentage.

Answer(b) % [1]

- 4 The total mass of 38 spoons is 1824 g.

Work out the mass of 53 spoons.

Answer g [2]

- 5 Prince Charming invests \$3000 for 5 years at a rate of 4% per year simple interest.

Calculate the **total interest** he will receive.

Answer \$ [2]

- 6 **Using a ruler and compasses only**, construct a triangle with sides 5 cm, 6 cm and 7 cm.

The 5 cm side has been drawn for you.



[2]

7

| | |
|----------------------|---------------|
| equilateral triangle | square |
| regular pentagon | parallelogram |
| regular hexagon | circle |

From the list write down

(a) the shape which has more than 6 lines of symmetry,

Answer(a) [1]

(b) the shape which has both acute and obtuse interior angles.

Answer(b) [1]

8

$$\mathbf{a} = \begin{pmatrix} 3 \\ 5 \end{pmatrix} \quad \mathbf{b} = \begin{pmatrix} -8 \\ 7 \end{pmatrix}$$

Write each of the following as a single vector.

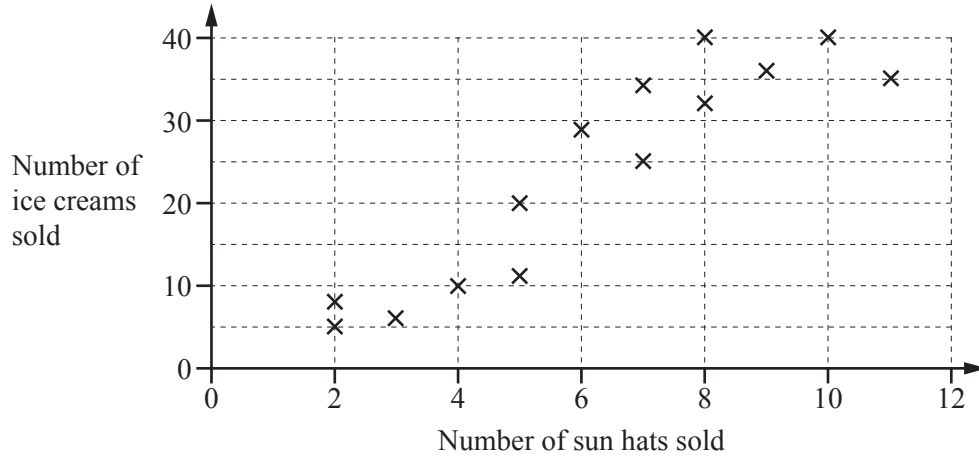
(a) $3\mathbf{a}$

Answer(a) $\begin{pmatrix} \\ \end{pmatrix}$ [1]

(b) $\mathbf{a} - \mathbf{b}$

Answer(b) $\begin{pmatrix} \\ \end{pmatrix}$ [1]

- 9 The scatter diagram shows the number of sun hats and ice creams sold by a shop each day for two weeks.



- (a) Write down the type of correlation shown by the diagram.

Answer(a) [1]

- (b) Describe the relationship between the number of sun hats sold and the number of ice creams sold.

Answer(b)

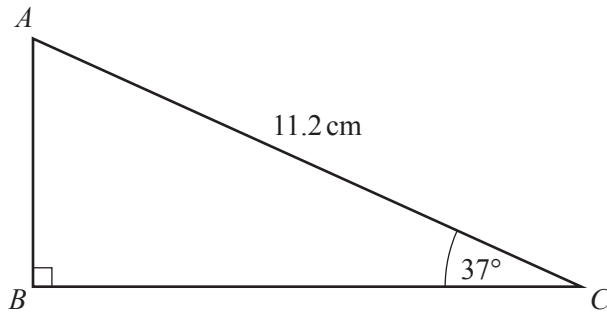
..... [1]

- 10 Simplify.

$$6uw^{-3} \times 4uw^6$$

Answer [2]

11

NOT TO
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Answer $AB = \dots\dots\dots$ cm [2]

12 (a) Write down the co-ordinates of the point where the line $y = 3x + 5$ crosses the y -axis.

Answer(a) ($\dots\dots\dots$, $\dots\dots\dots$) [1]

(b) Write down the equation of a line that is parallel to the line $y = 3x + 5$.

Answer(b) $\dots\dots\dots$ [1]

13 (a) Factorise.

$$3w^2 - 2w$$

Answer(a) [1]

(b) Expand and simplify.

$$x(2x + 3) + 5(x - 7)$$

Answer(b) [2]

14 Six donkeys are **each** given two 5 ml spoons of medicine three times each day.

Calculate the number of whole days a 2 litre bottle of medicine will last.

Answer days [3]

15 A cuboid has volume 288 cm^3 .

(a) The cuboid has length 12 cm and width 5 cm.

Calculate the height of the cuboid.

Answer(a) cm [2]

(b) 1 cm^3 of the cuboid has a mass of 4 g.

Work out the mass of the cuboid.

Answer(b) g [1]

16 Without using a calculator, work out $1\frac{4}{5} \div \frac{3}{7}$.

Show all your working and give your answer as a fraction in its lowest terms.

Answer [3]

17 (a) Write 82 600 in standard form.

Answer(a) [1]

(b) Calculate $\frac{6.02 \times 10^8 - 5 \times 10^6}{3 \times 10^6}$.

Give your answer in standard form.

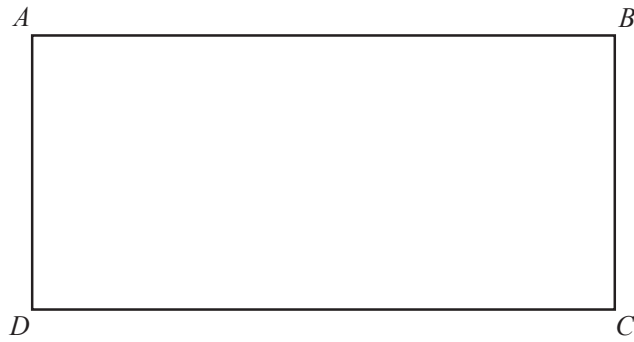
Answer(b) [2]

18 Solve the equation.

$$5(3y - 2) = 35$$

Answer $y =$ [3]

19 In this question use a ruler and compasses.



Shade the region inside rectangle $ABCD$ that is

- more than 2 cm from AD
- and
- more than 4 cm from B .

[3]

20 (a) 2, 3, 6, 11, 18, ...

(i) Write down the next two terms in this sequence.

Answer(a)(i) , [2]

(ii) Describe, in words, the rule for continuing this sequence.

Answer(a)(ii) [1]

(b) The n th term of a different sequence is $4n - 3$.

Work out the first three terms in this sequence.

Answer(b) , , [1]

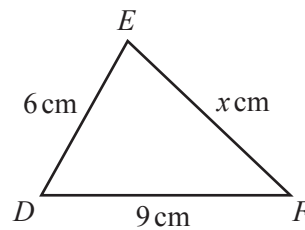
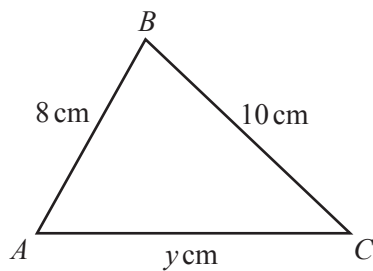
21 (a) Write 30 as a product of its prime factors.

Answer(a) [2]

(b) Find the lowest common multiple (LCM) of 30 and 45.

Answer(b) [2]

22



NOT TO
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Triangle ABC is similar to triangle DEF .

Calculate the value of

(a) x ,

Answer(a) $x =$ [2]

(b) y .

Answer(b) $y =$ [2]

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