
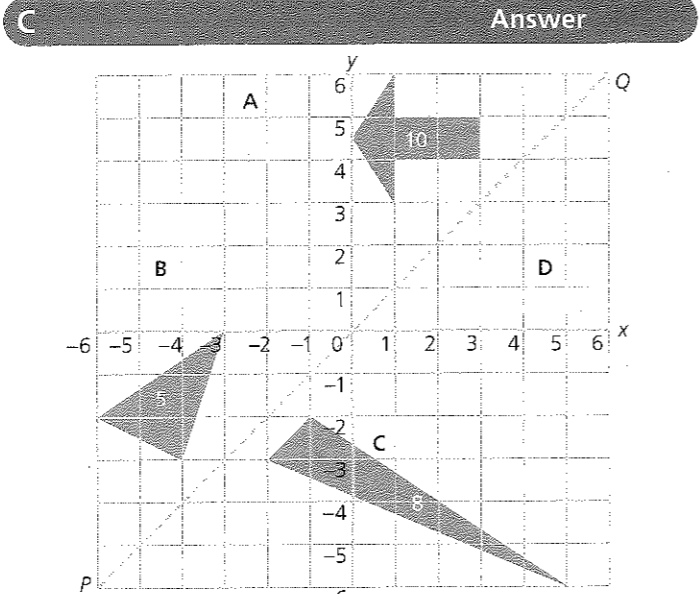


- | A | Answer |
|--|----------------|
| 1 Add the square of 3 to its cube. | 36 |
| 2 $\frac{24 \times 45}{9 \times 8} =$ | 15 |
| 3 Write $2^5 \times 2^2$ as | |
| a a power of two | a 2^7 |
| b a number. | b 128 |
| 4 Express the ratio 35:63 as a fraction in simplest form. | $\frac{5}{9}$ |
| 5 $3\frac{3}{4} - 1\frac{7}{8} =$ | $1\frac{7}{8}$ |
| 6 $0.1 \times 0.02 \times 0.003 =$ | 0.000006 |
| 7 $(1^2 + 0.1^2) - 1.01 =$ | 0 |
| 8 Round 1 467 538 to | |
| a 5 significant figures | a 1 467 500 |
| b 2 significant figures. | b 1 500 000 |
| 9 $9 < \sqrt{90} < 10$ True or false? | true |
| 10 If $x = 2, y = 3$, find the value of $(x + y)^2 - (x^2 + y^2)$. | 12 |
| 11 $\frac{a}{m} = m$ so $m =$ | 3 |
| 12 $2^4 + 1$ is a prime number. True or false? | true |

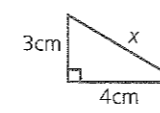

- | B | Answer |
|--|--------|
| 1 Find the cost of 360 envelopes if 45 cost £1. | £8 |
| 2 I buy 12 pairs of shorts for £95 and sell them at £12.50 each. What is my profit? | £55 |
| 3 900g is approximately | 2lb |
| 4 2.5m is approximately | 8ft |
| 5 Anwar leaves at 09:50 on a journey lasting $6\frac{1}{2}$ h. When does he arrive? | 16:20 |
| 6 A regular pentagon with sides measuring 42mm is enlarged by a scale factor of 1.5. What is the perimeter in centimetres of the new shape? | 31.5cm |
| 7 5m^3 of concrete is used to lay a path 2m wide and 10cm thick. How long is the path? | 25m |
| 8 To the nearest whole centimetre, give the circumference of a circle with radius 1.5cm. | 9cm |
| 9  What is the order of rotational symmetry of this shape about its centre? | 2 |
| 10 What is 588 seconds to the nearest minute? | 10min |



- Write down the coordinates of the centre of circle A. (-2, 5)
- Write down the coordinates of the centre of the reflection of circle A in the y-axis. (2, 5)
- Write down the coordinates of the centre of the reflection of circle A in the x-axis. (-2, -5)
- Write down the coordinates of the corners of triangle B. (-3, 0) (-4, 3) (-6, 2)
- On the grid above, sketch in the position of the reflection of triangle B in the x-axis.
- Write down the coordinates of each corner of the reflection of triangle B in the x-axis. (-3, 0) (-4, -3) (-6, -2)
- Write down the coordinates of the corners of triangle C. (1, -2) (2, -3) (-5, -6)
- On the grid above, sketch in the reflection of triangle C in the y-axis.
- Write down the coordinates of the corners of the reflection of triangle C in the y-axis. (-1, -2) (-2, -3) (5, -6)
- On the grid above, sketch in the reflection of object D about the diagonal line PQ.

- Here are four statements describing changes that could occur when an object undergoes a reflection:
- A The x-values of its coordinates stay unaltered and the y-values change sign (from +ve to -ve or from -ve to +ve).
- B The y-values of its coordinates stay unaltered and the x-values change sign.
- C Both the x-values and the y-values of its coordinates change sign.
- D The x-values become the y-values and the y-values become the x-values.
- Which statement A, B, C or D correctly describes a reflection in the x-axis? A
 - Which statement A, B, C or D correctly describes a reflection in the y-axis? B

- | A | Answer |
|--|----------------------|
| 1 $(3 \times 10^4) \times (2 \times 10^2) =$ | 6 000 000 |
| 2 $\frac{48 \times 66}{36} =$ | 88 |
| 3 Write $3^5 \times 3^3$ as a power of three. | 3^8 |
| 4 Insert the symbol $<$, $>$ or $=$ to make a correct statement. | $58\% < \frac{5}{8}$ |
| 5 $\frac{2}{3} + 2\frac{1}{2} =$ | $3\frac{1}{6}$ |
| 6 $0.3 \div 0.2 =$ | 1.5 |
| 7 $(1 + 0.1)^2 - 1.01 =$ | 0.2 |
| 8 2659 becomes 2700 when rounded to 2 significant figures. True or false? | true |
| 9 $25 < \sqrt{250} < 50$ True or false? | false |
| 10 If $a = 30, b = 40, c = 12$, find the value of $\frac{2a}{c} + \frac{3b}{a}$. | 9 |
| 11 $w^2 + 4^2 = 5^2$ so $w =$ | 3 |
| 12 $(2 \times 3)^2 - (2^3 + 3^3) =$ | 1 |

- | B | Answer |
|---|-------------------|
| 1 I save £14.50 per month. How much have I saved in one year? | £174 |
| 2 I buy 495 American dollars for £330. How many dollars do I get for each £1? | \$1.50 |
| 3 1600m is approximately | 1 mile |
| 4 $1350\text{mm} \times 5 =$ | 6.75m |
| 5 How many years between the start of 1 BCE and the end of 1 CE? | 2yr |
| 6 A right-angled triangle of sides 3cm, 4cm and 5cm is enlarged by a scale factor of 2.5. What is the area of the new triangle? | 37.5cm^2 |
| 7 What is the speed if travelling $\frac{1}{2}$ km in $\frac{1}{4}$ min? | 120km/h |
| 8  Use Pythagoras' Theorem ($a^2 + b^2 = c^2$) to find the length of side x. | 5cm |
| 9  The word OXO is written diagonally across a square. How many axes of symmetry are there for the word and the square as a whole? | 2 |
| 10 If 55 identical bottles can be filled from a 250l container, what is the approximate capacity of one bottle to the nearest half litre? | $4\frac{1}{2}$ l |

- | C | Answer |
|---|--------|
|---|--------|
- The children at Brightwell School are organising a lucky dip for the summer fair. Each prize has been carefully wrapped and placed in a large box. Visitors pay 20p a go and can choose one prize from the box. Since each prize is wrapped they will not know how lucky they have been until they unwrap their parcel. The table shows how many of each prize have been put into the box.

Prize	Number
chocolate bar	30
pencil	25
lollipop	50
sticker sheet	10
calculator	10
notebook	20
painting set	5
Total	150

- Ryan is the first person to try the lucky dip.
- How many lollipops are in the box when Ryan has his first try? 50
 - How many prizes are there in total when Ryan has his first try? 150
 - Express as a fraction in its lowest terms the probability of Ryan choosing a lollipop on his first try. $\frac{1}{3}$
 - Express as a decimal the probability of Ryan choosing a chocolate bar on his first try. 0.2
 - Express as a decimal the probability of Ryan not choosing a chocolate bar on his first try. 0.8
 - What is the probability of Ryan choosing either a chocolate bar or a notebook on his first try? 50 in 150
 - If Ryan chooses a chocolate bar on his first try what is the probability of choosing a notebook on his second try? 20 in 149
 - If Ryan chooses a chocolate bar on his first try what is the probability of choosing another chocolate bar on his second try? 29 in 149
- When Lucy tries the lucky dip exactly half of the prizes have gone but no one has won a painting set.
- What is the probability of Lucy choosing a painting set on her first try? $\frac{5}{75}$
 - How many tries would Lucy have to have to be certain of winning a painting set? 71
 - How much would this number of tries cost her? £14.20
 - Is it possible that Lucy could win a painting set with fewer tries than this? yes
She could win with any of her first 70 tries.