Questions

Q1.

Ali has x cards.
Belinda has twice as many cards as Ali.
Charlie has 5 more cards than Ali.

They have a total of 33 cards.

(a) Show that $4x + 5 = 33$

(3)

(b) Work out the number of cards Ali has.

.....

(2)

Q2.

There are 100 beads in a bag.

50 of the beads are red
25 of the beads are blue
15 of the beads are green
The rest of the beads are yellow

Sally takes at random a bead from the bag.

What is the probability that the bead is

(a) green,

.....

(2)

(b) black,

.....

(1)

(c) yellow?

.....

(2)

Q3.

(a) Work out the value of 3.1^4

.....

(1)

(b) Simplify $(p^3)^2$

.....

(1)

(c) Simplify $\frac{t^8}{t^3}$

.....

(1)

$2^3 \times 2^n = 2^9$

(d) Work out the value of n.

.....

(1)

Q4.

(a) Simplify $d + d + d + d$

.....

(1)

(b) Simplify $3f + 4 - 2f + 6$

.....

(2)

Q5.

The diagram shows a trapezium.

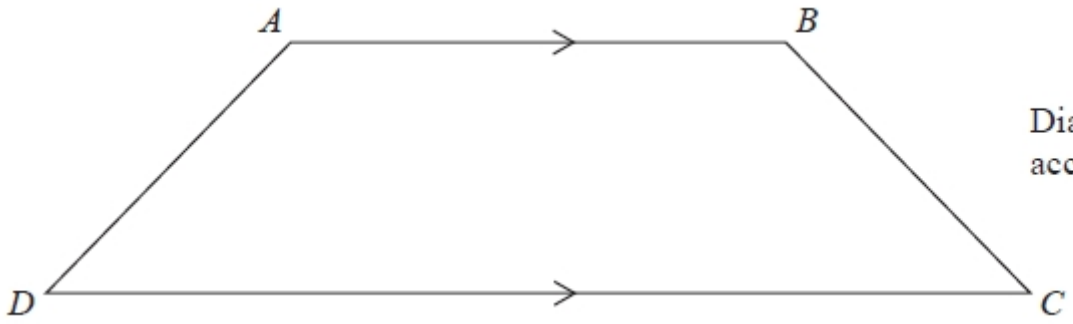


Diagram **NOT** accurately drawn

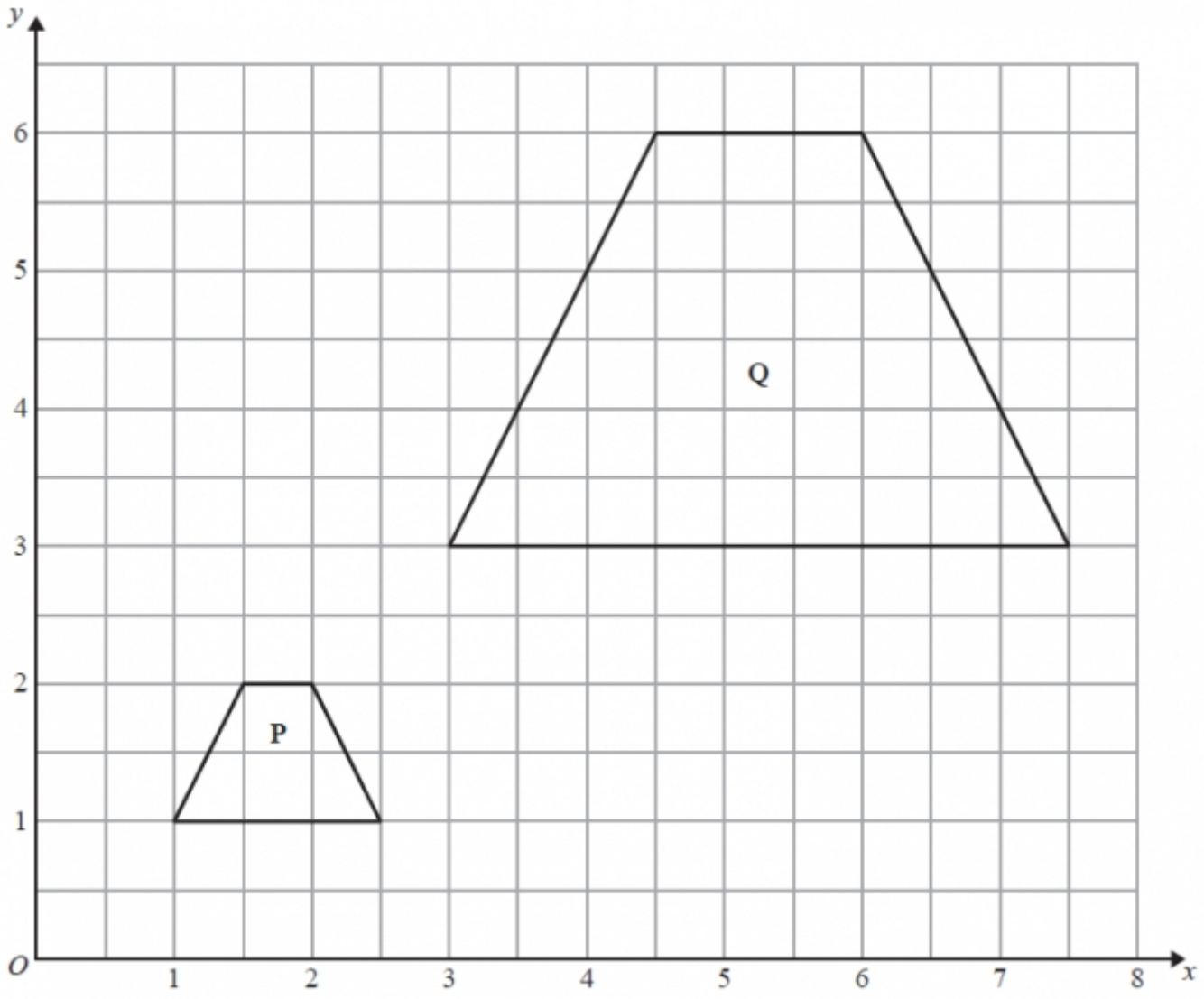
$AD = x$ cm.
BC is the same length as AD.
AB is twice the length of AD.
DC is 4 cm longer than AB.

The perimeter of the trapezium is 38 cm.

Work out the length of AD.

..... cm **(4)**

Q6.



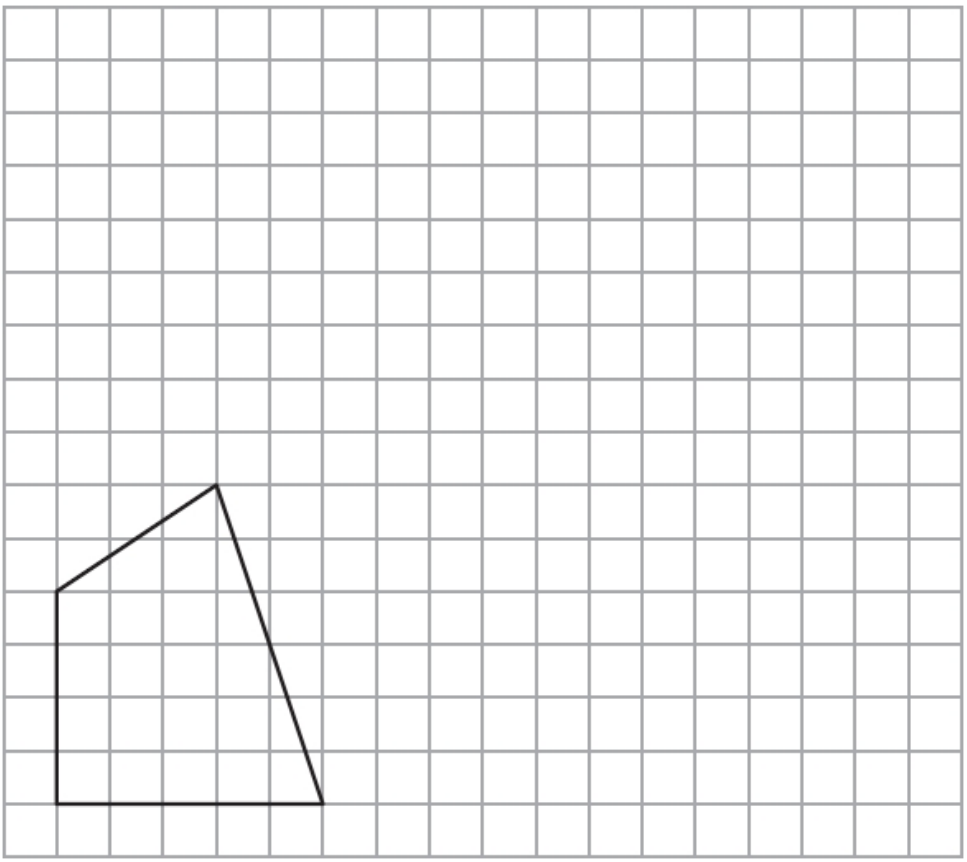
Describe fully the single transformation that maps shape **P** onto shape **Q**.

.....

.....

(3)

Q7.

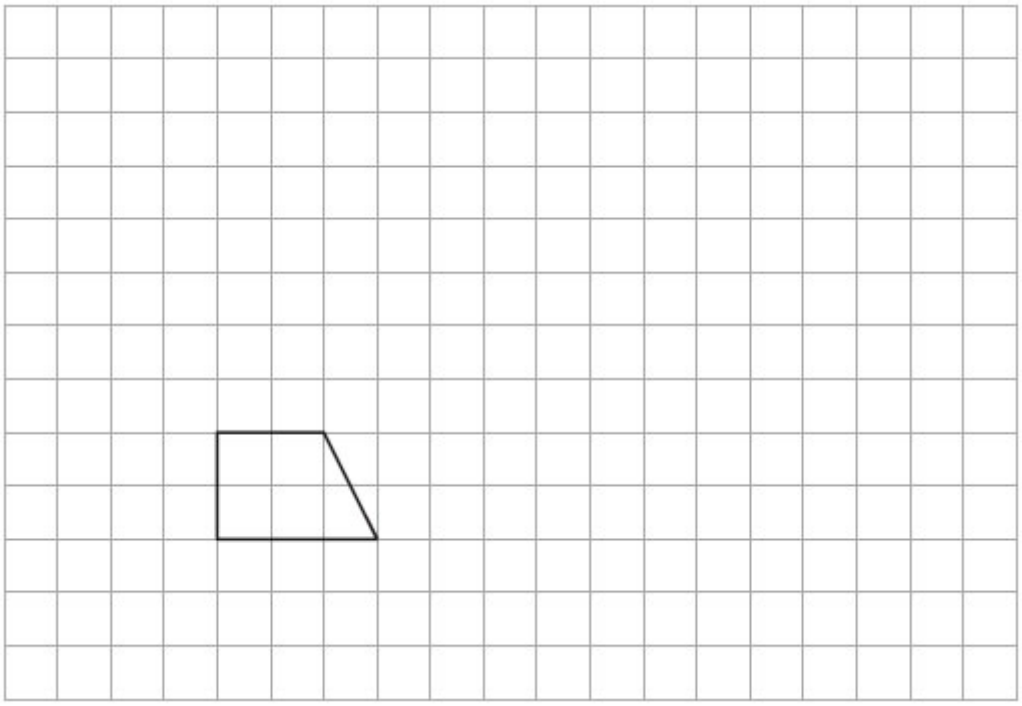


On the grid, draw an enlargement of the shape with a scale factor of 2

(2)

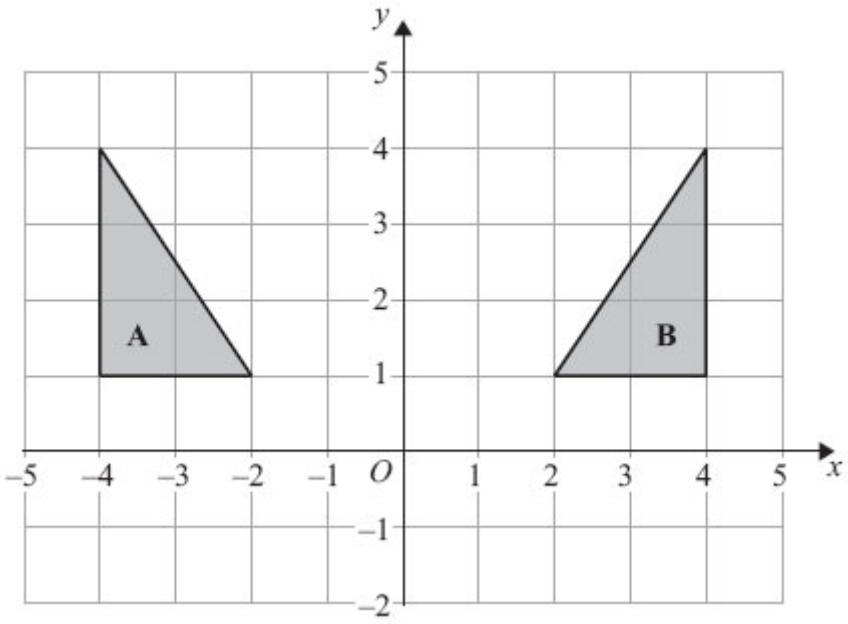
Q8.

Here is a shape drawn on a grid.



(a) On this grid, draw an enlargement of the shape with scale factor 3

(2)



(b) Describe fully the single transformation that maps shape **A** onto shape **B**.

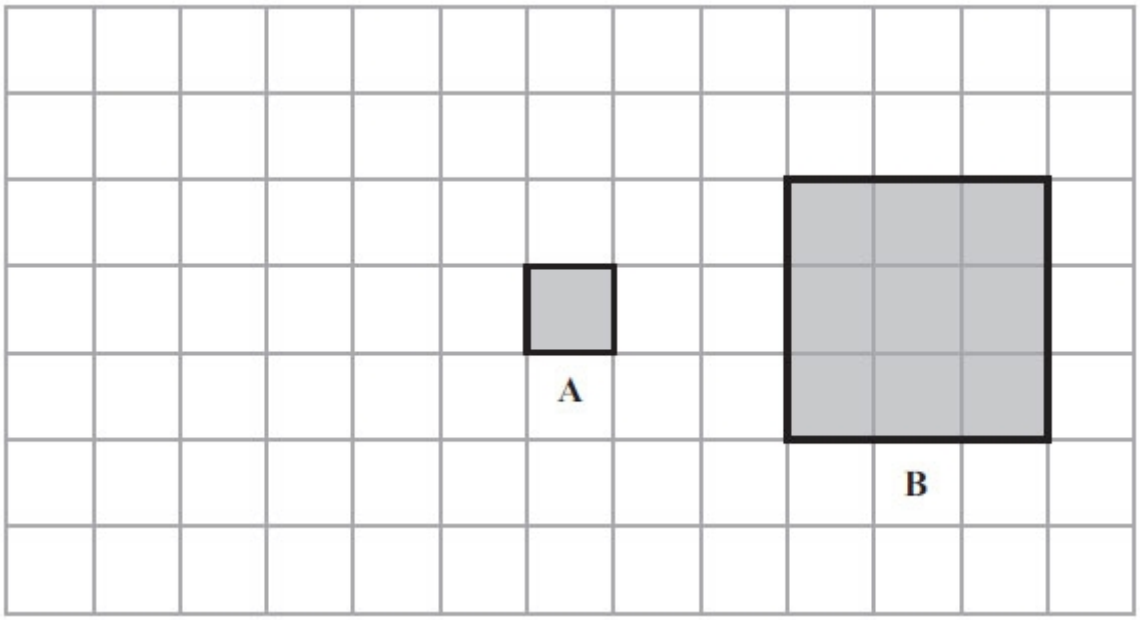
.....

.....

(2)

9.

Here are two squares.



Square **B** is an enlargement of square **A**.

(a) What is the scale factor of the enlargement?

.....

(1)

Square **A** is moved 4 squares to the left.

(b) On the grid, draw the new position of square **A**.

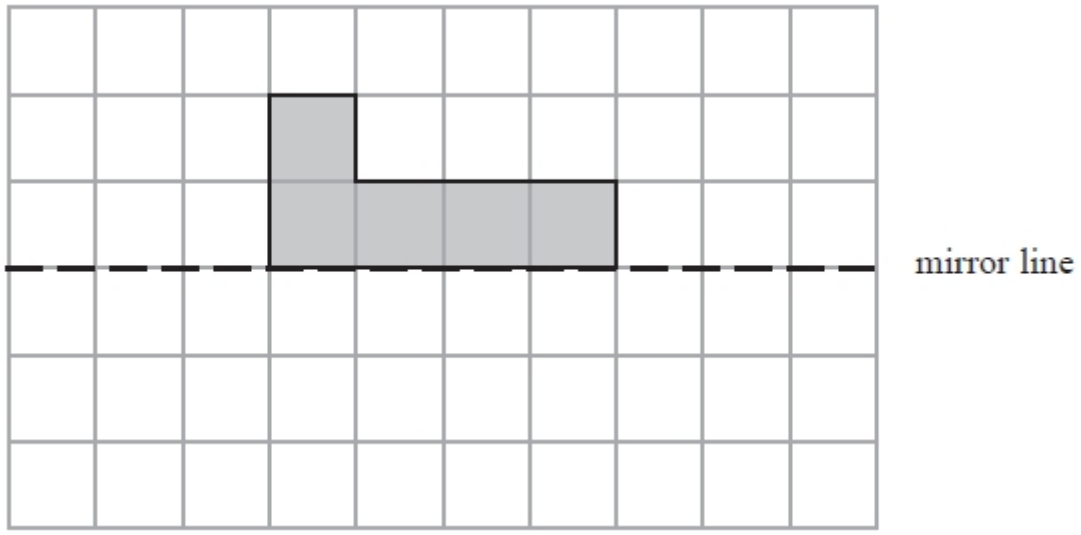
(1)

(c) In the space below, draw accurately a square with side of length 4 cm.

(2)

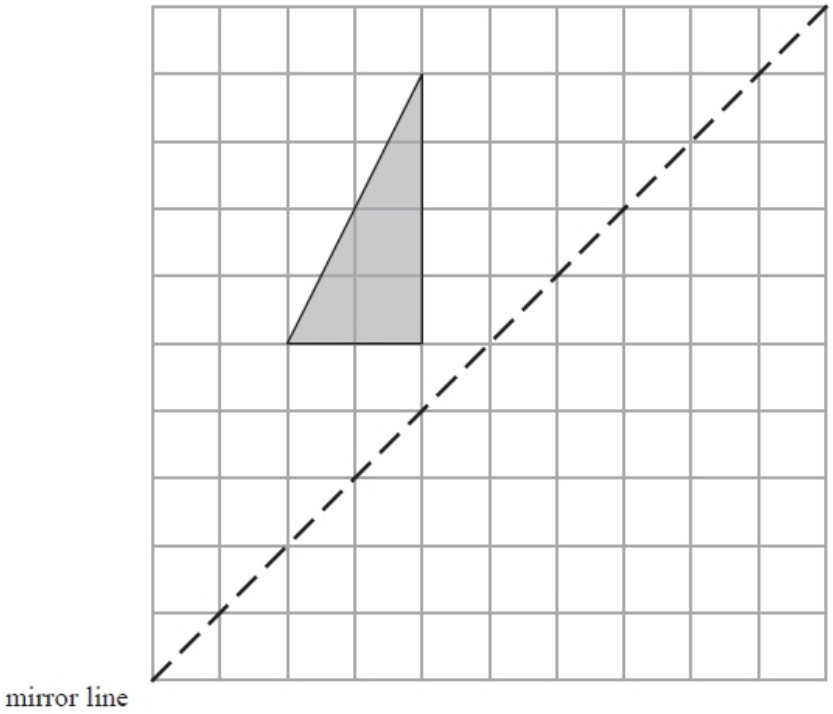
Q10.

(a) Reflect the shaded shape in the mirror line.



(1)

(b) Reflect the shaded shape in the mirror line.



(2)

(Total for question = 3 marks)

Q11.

PQR is an isosceles triangle.

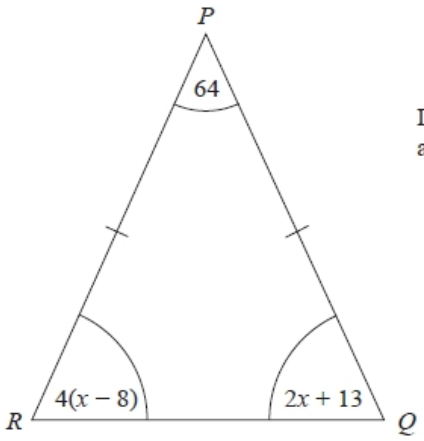


Diagram **NOT** accurately drawn

PQ = *PR*
All the angles are in degrees.

Work out the value of *x*.

x = ...

Q12.

(a) Simplify $m + m + m + m + m$

.....

(1)

(b) Simplify $2p + 7p$

.....

(1)

(c) Simplify $t \times w \times 4$

.....

(1)

Q13.

Solve $3(x – 2) = x + 7$

$x =$ . . . . . .

Q14.

(a) Solve $x + 3 = 12$

$x =$ .....

(1)

(b) Solve $\frac{y}{5} = 10$

$y =$ .....

(1)

Q15.

(a) Solve $8f + 19 = 15$

$f =$ .....

(2)

(b) Solve $2c + 5 = c + 8$

$c =$ .....

(2)

Q16.

Solve $4(x + 3) = 2x + 8$

$x =$ .....

(Total for question = 3 marks)

Q17.

(a) Solve $m - 5 = 8$

$m =$ .....

(1)

(b) Solve $7n = 21$

$n =$ .....

(1)

(c) Solve $\frac{t}{4} + 3 = 12$

$t =$ .....

(2)

(Total for question = 4 marks)