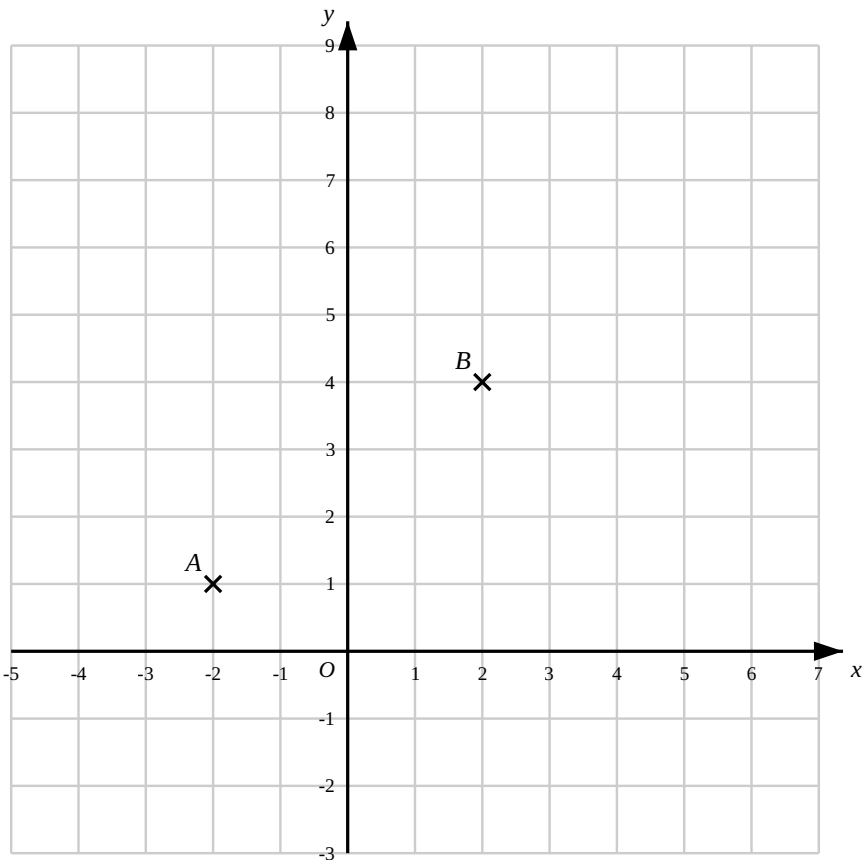
GEOMETRY: COORDINATES & PROPERTIES

Best Guess Mastery Worksheet (Target Grade 4/5)

I Do

The diagram shows points *A* and *B* marked on a grid of squares.



(a) On the grid, draw the line with equation $x = -3$

(1)

M is the midpoint of *AB*.

(b) Find the coordinates of *M*.

(..... , ...) **(2)**

C is the point with coordinates (5, *c*) where $c > 0$.

The triangle *ABC* is an isosceles triangle with *AB* = *BC*.

(c) Find the value of c.

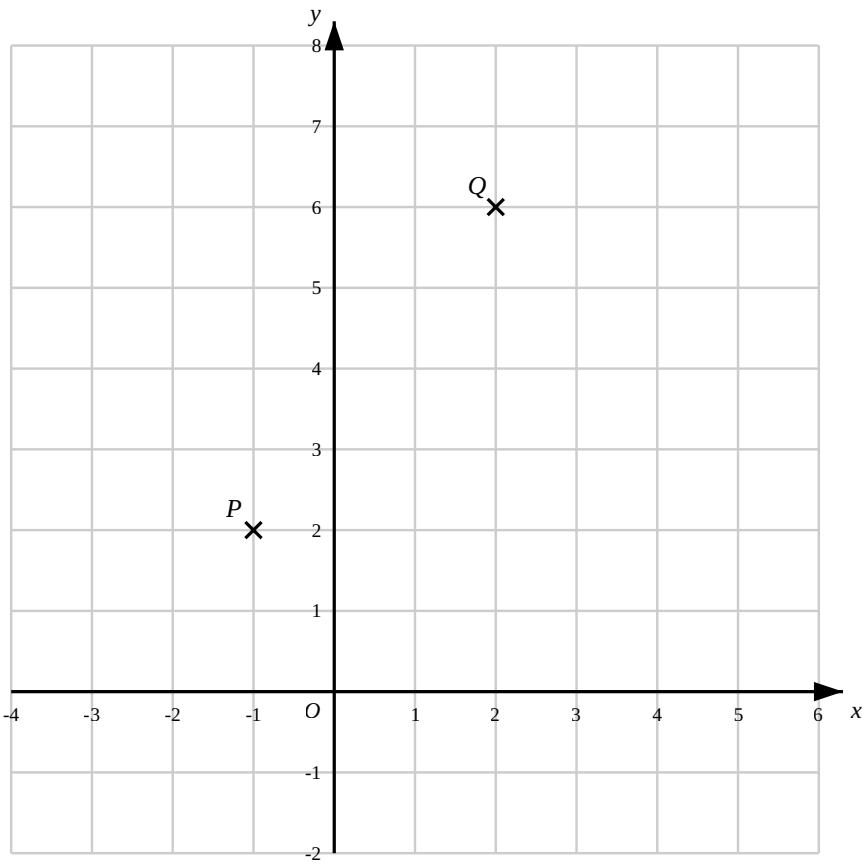
c=..... **(2)**

GEOMETRY: COORDINATES & PROPERTIES

Best Guess Mastery Worksheet (Target Grade 4/5)

We Do

The diagram shows points *P* and *Q* marked on a grid of squares.



(a) On the grid, draw the line with equation $y = 7$

(1)

M is the midpoint of *PQ*.

(b) Find the coordinates of *M*.

(..... , ...) **(2)**

R is the point with coordinates (3, *r*) where $r > 0$.

The triangle *PQR* is an isosceles triangle with *PQ* = *PR*.

(c) Find the value of r.

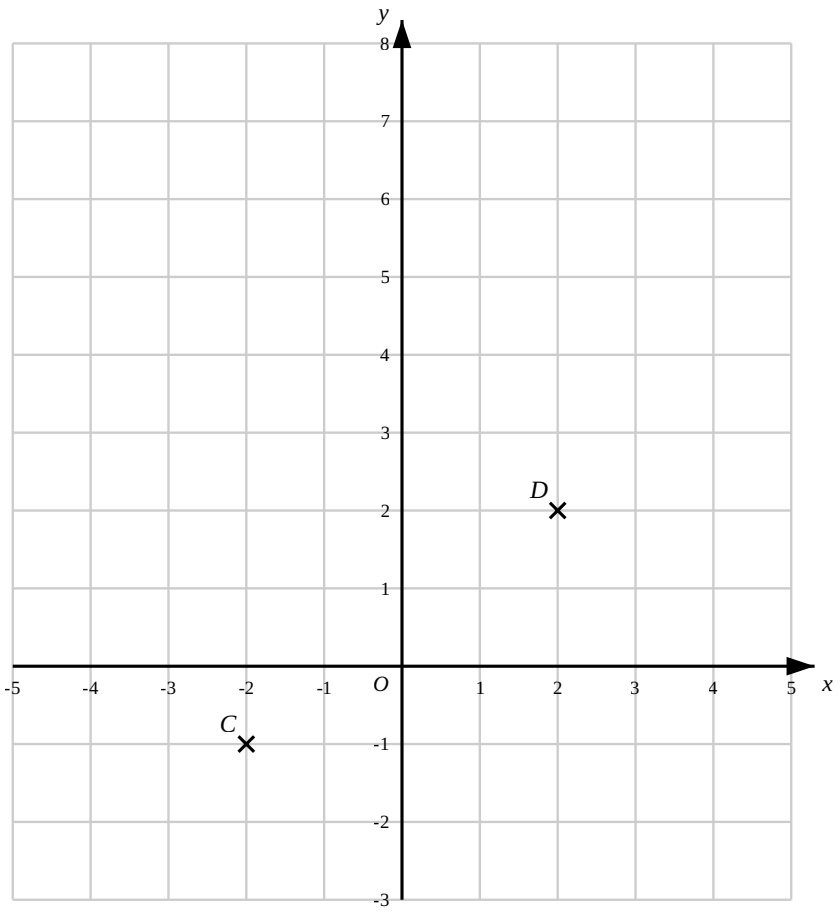
$r=$ ..... **(2)**

GEOMETRY: COORDINATES & PROPERTIES

Best Guess Mastery Worksheet (Target Grade 4/5)

You Do 1

The diagram shows points *C* and *D* marked on a grid of squares.



(a) On the grid, draw the line with equation $x = 4$

(1)

M is the midpoint of *CD*.

(b) Find the coordinates of *M*.

(..... , ...) **(2)**

E is the point with coordinates (2, *e*) where $e > 2$.

The triangle *CDE* is an isosceles triangle with *CD* = *DE*.

(c) Find the value of e.

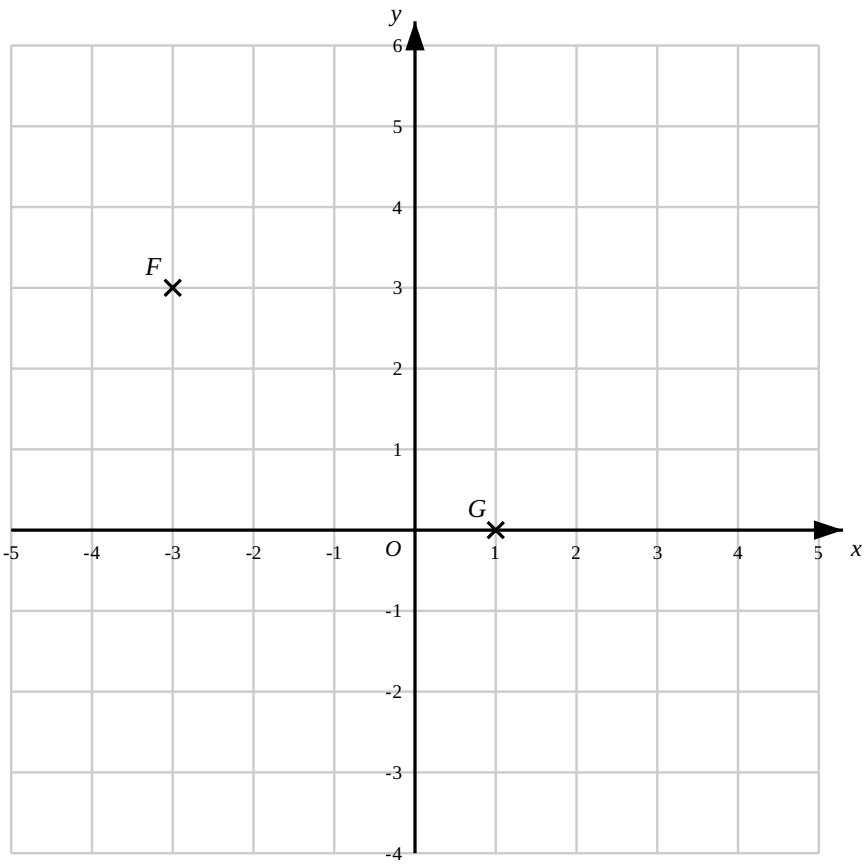
e=..... **(2)**

GEOMETRY: COORDINATES & PROPERTIES

Best Guess Mastery Worksheet (Target Grade 4/5)

You Do 2

The diagram shows points *F* and *G* marked on a grid of squares.



(a) On the grid, draw the line with equation $y = -2$

(1)

M is the midpoint of *FG*.

(b) Find the coordinates of *M*.

(..... , ...) **(2)**

H is the point with coordinates $(-3, h)$ where $h < 0$.

The triangle *FGH* is an isosceles triangle with *FG* = *GH*.

(c) Find the value of h.

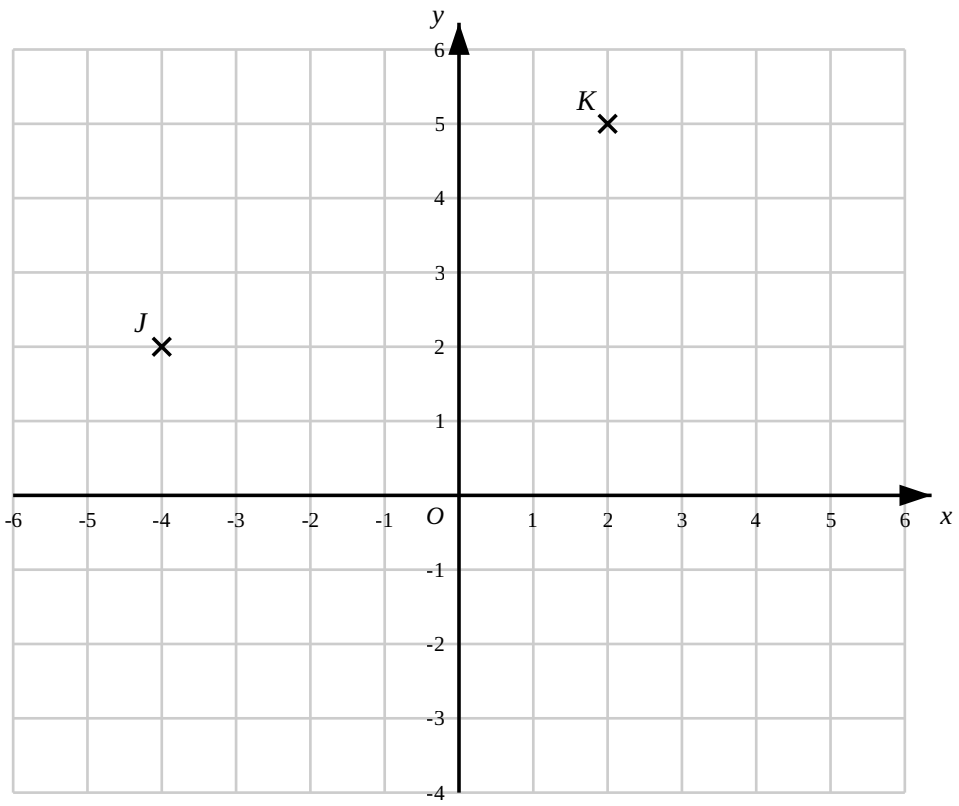
$h=$ ..... **(2)**

GEOMETRY: DRAWING LINEAR GRAPHS

Best Guess Mastery Worksheet (Target Grade 5/6)

Challenge 1

The diagram shows points *J* and *K* marked on a grid of squares.



(a) Find the coordinates of the midpoint of *JK*.

(..... , ...) **(2)**

(b) On the grid, draw the graph of $y = -x + 3$ for values of x from -2 to 5.

(2)

The line $y = -x + 3$ crosses the x-axis at point *R* and the y-axis at point *S*.
O is the origin (0,0).

(c) Find the area of the triangle *ORS*.

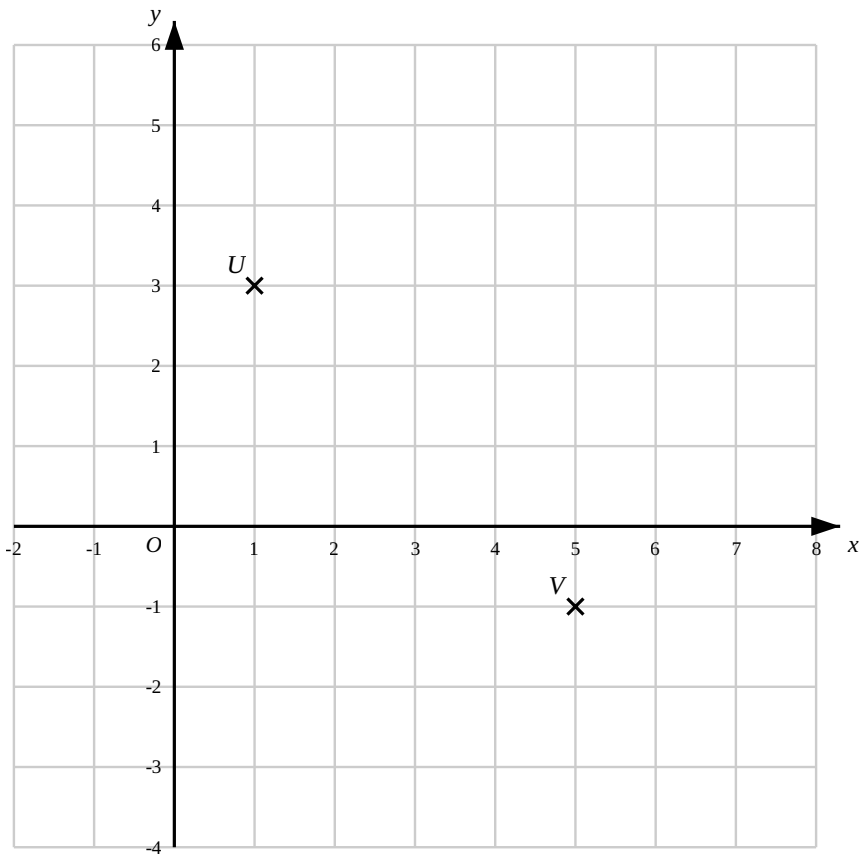
..... **(2)**

GEOMETRY: LINEAR GRAPHS & EQUATIONS

Best Guess Mastery Worksheet (Target Grade 5/6)

Challenge 2

The diagram shows points *U* and *V* marked on a grid of squares.



(a) Find the equation of the straight line passing through *U* and *V*.

.....

(2)

(b) On the grid, draw the graph of $y = x - 2$ for values of x from 0 to 6.

(2)

(c) Write down the coordinates of the point of intersection between the line segment *UV*

and the line $y = x - 2$.

(..... , ...) **(1)**

Answers & Worked Solutions

I Do:

(a) A vertical line drawn crossing the x-axis at −3.

(b) Midpoint = ((−2 + 2) ÷ 2, (1 + 4) ÷ 2) = (0, 2.5). **Answer: (0, 2.5)**

(c) $AB^2 = 4^2 + 3^2 = 25$. $BC^2 = (5-2)^2 + (c-4)^2 = 9 + (c-4)^2$. Set $9 + (c-4)^2 = 25 \rightarrow (c-4)^2 = 16 \rightarrow c-4 = \pm 4 \rightarrow c=8$ or $c=0$. Since $c > 0$, **c = 8**.

We Do:

(a) A horizontal line drawn crossing the y-axis at 7.

(b) Midpoint = ((−1 + 2) ÷ 2, (2 + 6) ÷ 2) = (0.5, 4). **Answer: (0.5, 4)**

(c) $PQ^2 = 3^2 + 4^2 = 25$. $PR^2 = (3-(-1))^2 + (r-2)^2 = 16 + (r-2)^2$. Set $16 + (r-2)^2 = 25 \rightarrow (r-2)^2 = 9 \rightarrow r-2 = \pm 3 \rightarrow r=5$ or $r=-1$. Since $r > 0$, **r = 5**.

You Do 1:

(a) A vertical line drawn crossing the x-axis at 4.

(b) Midpoint = ((−2 + 2) ÷ 2, (−1 + 2) ÷ 2) = (0, 0.5). **Answer: (0, 0.5)**

(c) $CD^2 = 4^2 + 3^2 = 25$. $DE^2 = (2-2)^2 + (e-2)^2 = (e-2)^2$. Set $(e-2)^2 = 25 \rightarrow e-2 = \pm 5 \rightarrow e=7$ or $e=-3$. Since $e > 2$, **e = 7**.

You Do 2:

(a) A horizontal line drawn crossing the y-axis at −2.

(b) Midpoint = ((−3 + 1) ÷ 2, (3 + 0) ÷ 2) = (−1, 1.5). **Answer: (−1, 1.5)**

(c) $FG^2 = 4^2 + 3^2 = 25$. $GH^2 = (-3-1)^2 + (h-0)^2 = 16 + h^2$. Set $16 + h^2 = 25 \rightarrow h^2 = 9 \rightarrow h = \pm 3$. Since $h < 0$, **h = −3**.

Challenge 1:

(a) Midpoint = ((−4 + 2) ÷ 2, (2 + 5) ÷ 2) = **(−1, 3.5)**.

(b) A straight line drawn passing through the points (0, 3), (3, 0), and (5, −2).

(c) Crosses x-axis at R(3, 0). Crosses y-axis at S(0, 3). Base = 3, Height = 3. Area = 0.5 × 3 × 3 = **4.5**.

Challenge 2:

(a) Gradient m = (−1 − 3) / (5 − 1) = −4 / 4 = −1. Passes through (1, 3): y − 3 = −1(x − 1) → y = −x + 1 + 3 → **y = −x + 4**.

(b) A straight line drawn passing through the points (0, −2), (2, 0), and (6, 4).

(c) Intersection point is where −x + 4 = x − 2 → 6 = 2x → x = 3. y = 3 − 2 = 1. **Answer: (3, 1)**.