

1 Coordinates and midpoints ☐

- a) A is (2, -1) and B is (10, 5). P is on AB with $AP : PB = 1 : 3$. Find P.
b) The midpoint of (2a, 5) and (4, a + 3) lies on the line $y = x$. Find a.

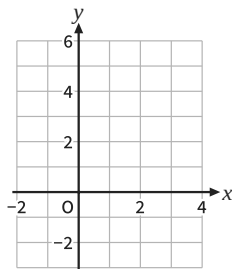
a) $\frac{1}{4}$ of (8, 6) is (2, 1.5): $P = (4, 0.5)$

b) $a + 2 = \frac{a + 8}{2}$

$a = 4$

2 Plotting straight lines ☐

- a) Draw $2y + 3x = 6$.
b) Draw $y = 2x - 2$. Find exactly where the lines cross.



a) $(-2, 6)$ to $(4, -3)$ b) $(\frac{10}{7}, \frac{6}{7})$

3 Gradient of a line ☐

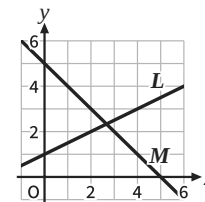
- a) The line through (a, 3) and (5, a) has gradient $-\frac{2}{3}$. Find a.
b) Show that (-2, 9), (1, 3) and (6, -7) lie on one straight line.

a) $3(a - 3) = -2(5 - a)$, $a = -1$

b) $\frac{-6}{3} = \frac{-10}{5} = -2$

4 Equation from a graph ☐

- a) Find the equations of L and M.
b) Find the area of the triangle they make with the y axis.



a) $y = \frac{1}{2}x + 1$, $y = -x + 5$

b) $x = \frac{8}{3}$, area $\frac{16}{3}$

5 Perpendicular lines ☐

A is (-3, 2) and B is (5, 6).

- a) Find the equation of the perpendicular bisector of AB.
b) Show that the point (-1, 8) is the same distance from A as from B.

a) midpoint (1, 4), gradient -2

$y = -2x + 6$

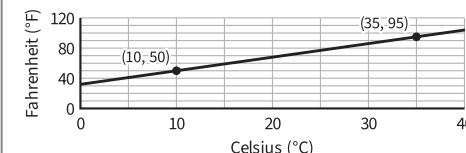
b) $2^2 + 6^2 = 40$ and $6^2 + 2^2 = 40$

Graphs revision mat answers

6 Conversion graphs ☐

Celsius ($^{\circ}\text{C}$) to Fahrenheit ($^{\circ}\text{F}$).

- a) Find a formula for F in terms of C.
b) Which value is the same in $^{\circ}\text{C}$ and $^{\circ}\text{F}$?



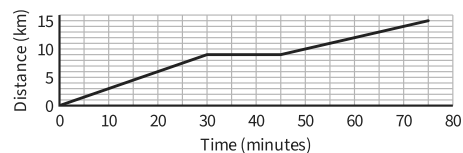
a) $45 \div 25 = 1.8$, $F = 1.8C + 32$

b) $C = 1.8C + 32$, $C = -40$

7 Distance time graphs ☐

Nia cycles to a friend's house.

- a) Find her average speed in km/h.
b) Find her top speed in m/s.

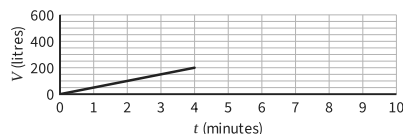


a) 15 km in 1.25 h = 12 km/h

b) 18 km/h = 5 m/s

8 Rates from graphs ☐

- a) Find V in terms of t.
b) At 4 minutes a second tap adds 25 litres a minute. When is 600 litres reached?



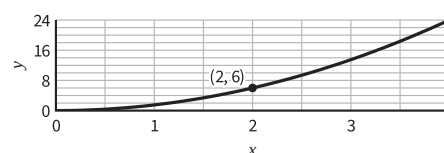
a) $V = 50t$

b) $400 \div 75 = 5\frac{1}{3}$: 9 min 20 s

9 Direct proportion graphs ☐

y is directly proportional to x^2 .

- a) Find y in terms of x.
b) x rises 20%. Find y's percentage rise.



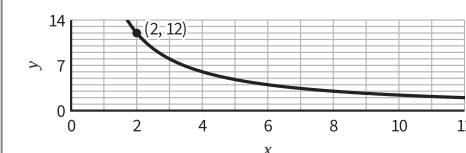
a) $6 = k \times 4$, $y = 1.5x^2$

b) $1.2^2 = 1.44$, so 44%

10 Inverse proportion graphs ☐

y is inversely proportional to x.

- a) Find y when $x = 0.4$.
b) (a, a) is on the curve. Find a exactly.



a) $k = 24$, $24 \div 0.4 = 60$

b) $a^2 = 24$, $a = 2\sqrt{6}$