



ACHIEVE ACADEMY

GCSE Maths — Foundation Tier

Real-Life Graphs · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☒ Secure

☐ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Real-Life Graphs

Total marks available: 99

● Real-Life Graphs

✓(a) €78; (b) £10

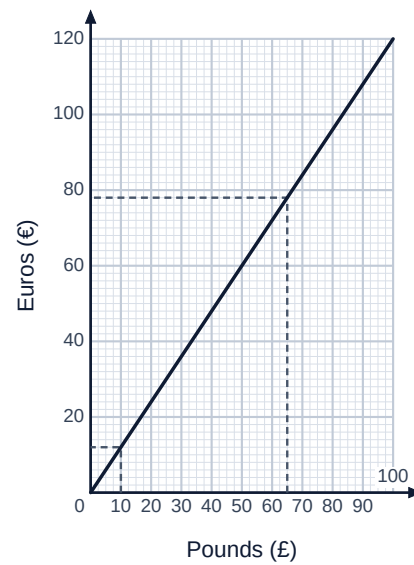
Q1 · ● Developing · 2 marks

METHOD

(a) Up from £65 to the line, then across: €78

(b) Across from €12 to the line, then down: £10

B1 · B1



✓(a) 33 lb; (b) 10 kg

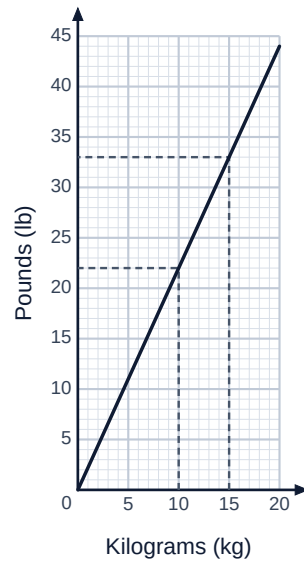
Q2 · ● Developing · 2 marks

METHOD

(a) Up from 15 kg to the line, then across: 33 lb

(b) Across from 22 lb to the line, then down: 10 kg

B1 · B1



✓ Correct straight line drawn (see below)

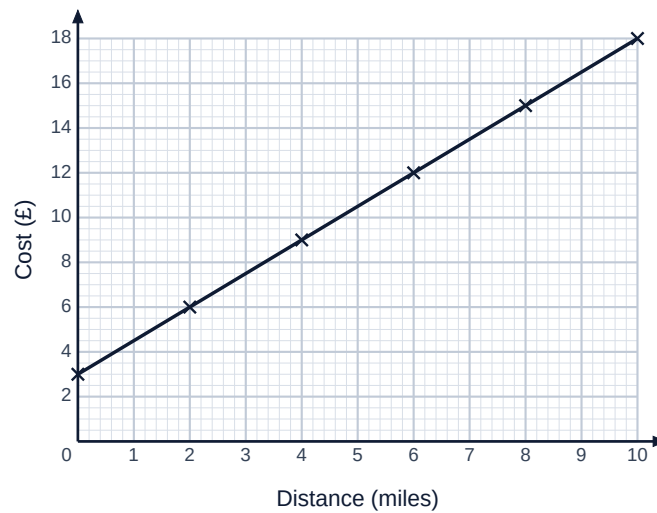
Q3 · ● Developing · 2 marks

METHOD

Plot the points from the table and join them with a ruled straight line starting at (0, 3).

B1 points · B1 line

Distance (miles)	0	2	4	6	8	10
Cost (£)	3	6	9	12	15	18



✓ Correct straight line drawn (see below)

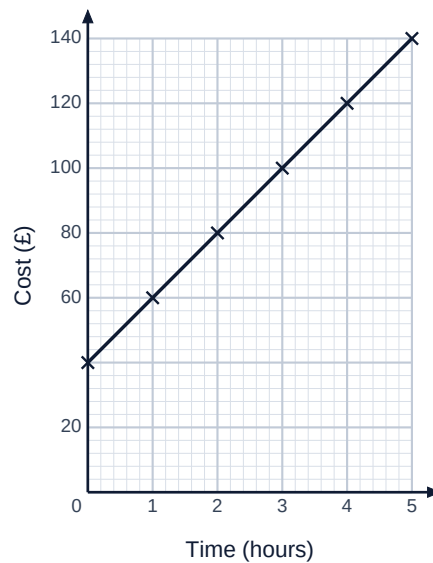
Q4 · ● Developing · 2 marks

METHOD

Plot the points from the table and join them with a ruled straight line starting at (0, 40).

B1 points · B1 line

Time (hours)	0	1	2	3	4	5
Cost (£)	40	60	80	100	120	140



✓ (a) 10 km; (b) 10 minutes; (c) 90 minutes

Q5 · ● Developing · 3 marks

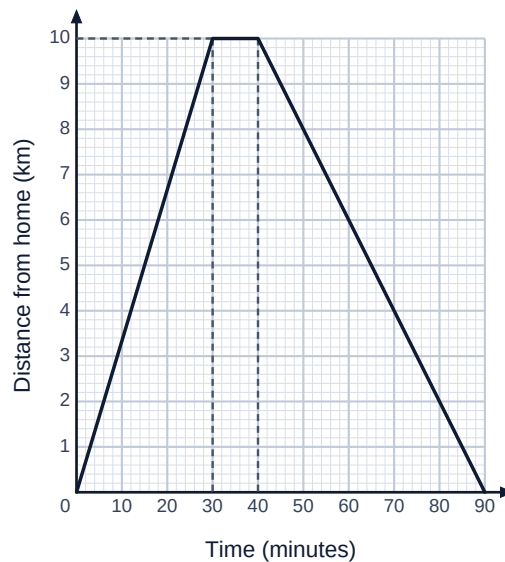
METHOD

(a) The highest point of the graph: 10 km

(b) The flat part runs from 30 to 40 minutes: $40 - 30 = 10$ minutes

(c) The graph returns to 0 km at 90 minutes

B1 · B1 · B1



✓ (a) 2 km; (b) 20 minutes; (c) 70 minutes

Q6 · ● Developing · 3 marks

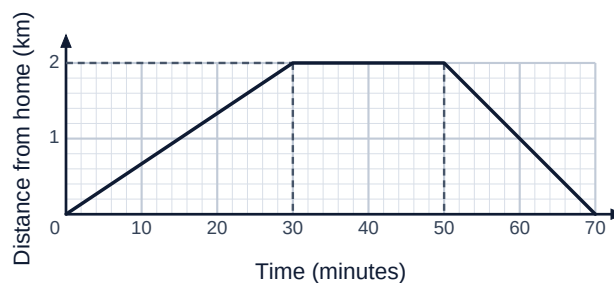
METHOD

(a) The highest point of the graph: 2 km

(b) The flat part runs from 30 to 50 minutes: $50 - 30 = 20$ minutes

(c) The graph returns to 0 km at 70 minutes

B1 · B1 · B1



✓ (a) 5 km; (b) 30 minutes; (c) 140 minutes

Q7 · ● Developing · 3 marks

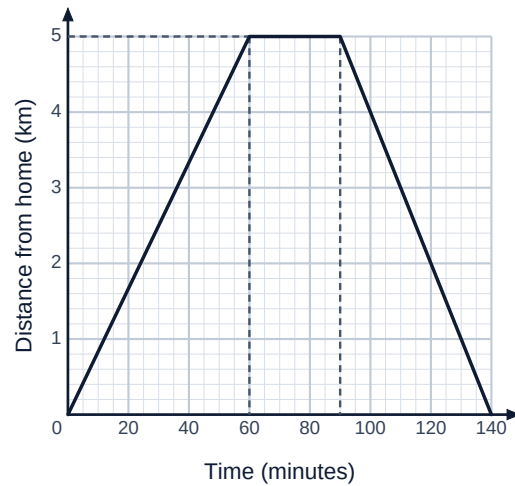
METHOD

(a) The highest point of the graph: 5 km

(b) The flat part runs from 60 to 90 minutes: $90 - 60 = 30$ minutes

(c) The graph returns to 0 km at 140 minutes

B1 · B1 · B1



✓(a) 22 lb; (b) 15 kg

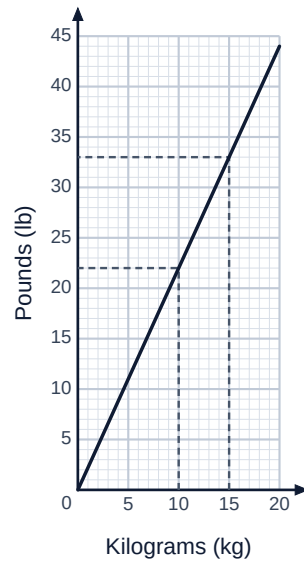
Q8 · ● Developing · 2 marks

METHOD

(a) Up from 10 kg to the line, then across: 22 lb

(b) Across from 33 lb to the line, then down: 15 kg

B1 · B1



✓(a) €102; (b) £50

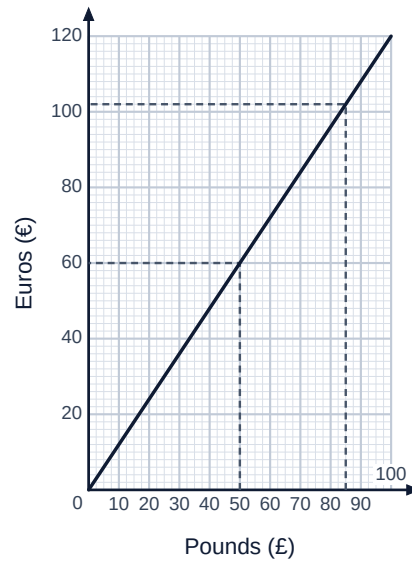
Q9 · ● Developing · 2 marks

METHOD

(a) Up from £85 to the line, then across: €102

(b) Across from €60 to the line, then down: £50

B1 · B1



✓ Correct straight line drawn (see below)

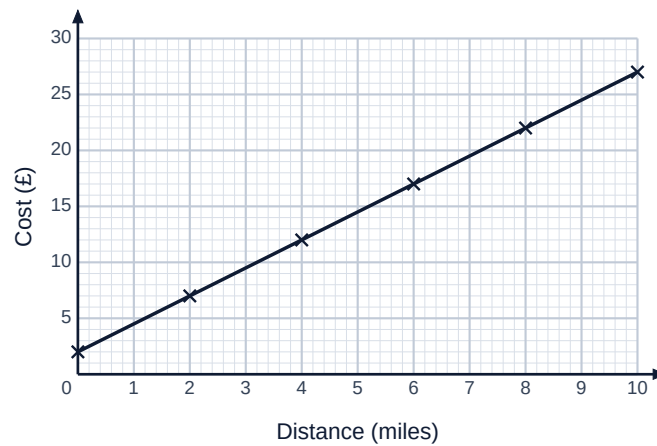
Q10 · ● Developing · 2 marks

METHOD

Plot the points from the table and join them with a ruled straight line starting at (0, 2).

B1 points · B1 line

Distance (miles)	0	2	4	6	8	10
Cost (£)	2	7	12	17	22	27



✓ (a) 14°F ; (b) 30°C ; (c) 32°F

Q11 · ● Secure · 3 marks

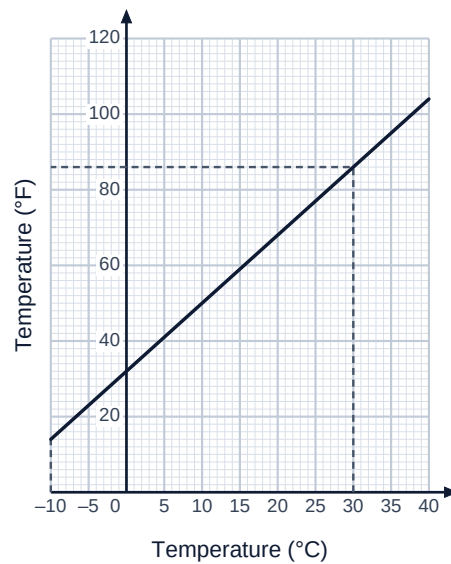
METHOD

(a) Up from -10°C to the line, then across: 14°F

(b) Across from 86°F to the line, then down: 30°C

(c) Where the line meets the $^{\circ}\text{F}$ axis (0°C): 32°F

B1 · B1 · B1



✓(a) 5 kg; (b) 220 lb

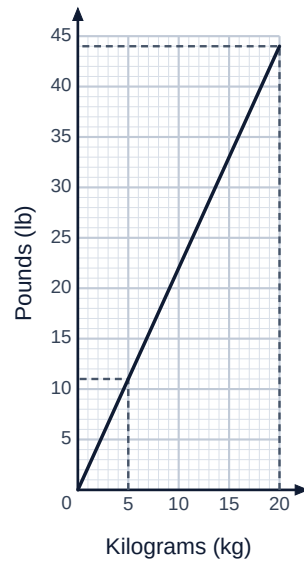
Q12 · ● Secure · 3 marks

METHOD

(a) Across from 11 lb to the line, then down: 5 kg

(b) 20 kg = 44 lb from the graph; 100 = 20 × 5, so 100 kg = 44 × 5 = 220 lb

B1 · M1 A1



✓ (a) 110, 150, 190; (b) graph drawn (see below) Q13 · ● Secure · 4 marks

METHOD

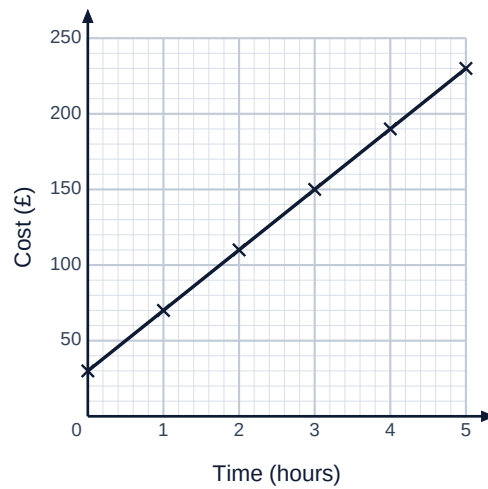
(a) 2 hours: $\pounds 30 + 2 \times \pounds 40 = \pounds 110$; 3 hours: $\pounds 30 + 3 \times \pounds 40 = \pounds 150$; 4 hours: $\pounds 30 + 4 \times \pounds 40 = \pounds 190$

B2 all correct (B1 for one or two)

Plot the points from the table and join them with a ruled straight line starting at (0, 30).

B1 points · B1 line

Time (hours)	0	1	2	3	4	5
Cost (£)	30	70	110	150	190	230



✓ (a) 40 km/h; (b) on the way back: from 70 to 90 minutes

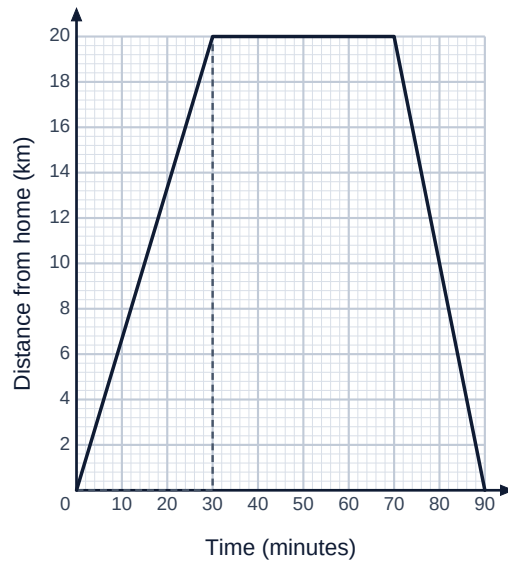
Q14 · ● Secure · 4 marks

METHOD

(a) 20 km in 30 minutes, so in 60 minutes: $20 \times 60 \div 30 = 40$ km/h

(b) The steeper line is the faster part. On the way back 20 km takes 20 minutes: $20 \times 60 \div 20 = 60$ km/h

M1 distance $\div$ time $\cdot$ A1 $\cdot$ B1 B1



✓ (a) 50°F ; (b) 30°C ; (c) 32°F

Q15 · ● Secure · 3 marks

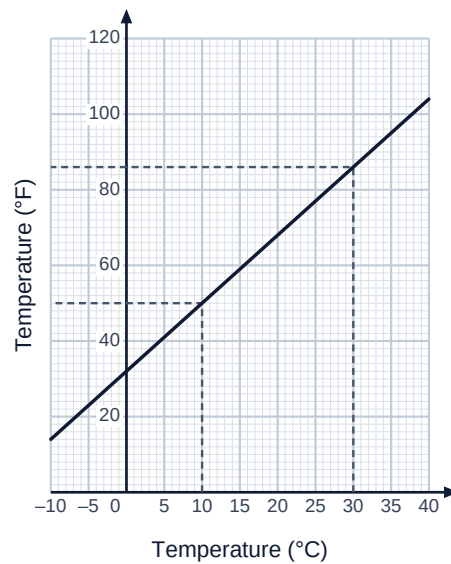
METHOD

(a) Up from 10°C to the line, then across: 50°F

(b) Across from 86°F to the line, then down: 30°C

(c) Where the line meets the $^{\circ}\text{F}$ axis (0°C): 32°F

B1 · B1 · B1



✓ (a) 60 km/h; (b) on the way there: from 0 to 30 minutes

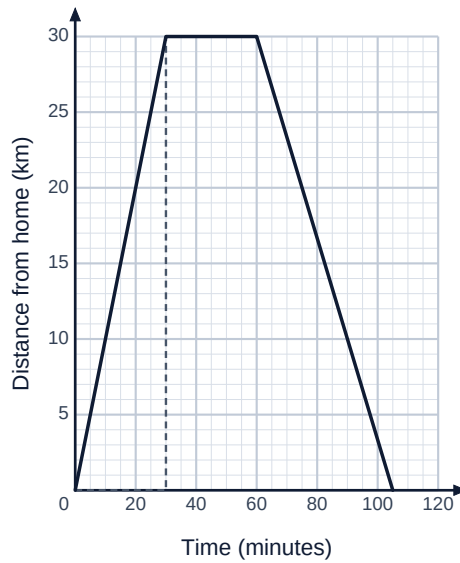
Q16 · ● Secure · 4 marks

METHOD

(a) 30 km in 30 minutes, so in 60 minutes: $30 \times 60 \div 30 = 60$ km/h

(b) The steeper line is the faster part. On the way back 30 km takes 45 minutes: $30 \times 60 \div 45 = 40$ km/h

M1 distance $\div$ time $\cdot$ A1 $\cdot$ B1 B1



✓ (a) 20 km/h; (b) on the way there: from 0 to 30 minutes

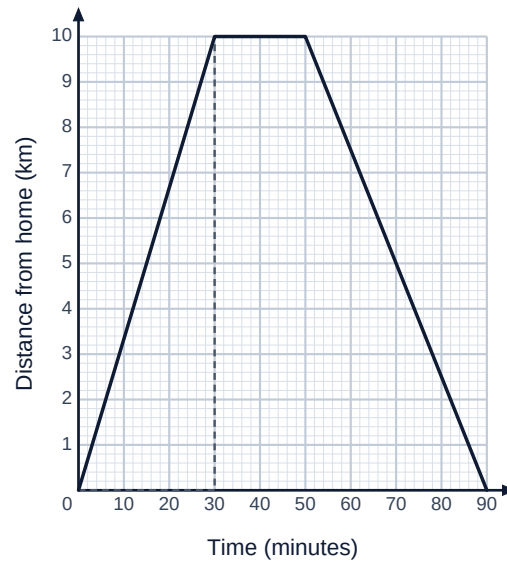
Q17 · ● Secure · 4 marks

METHOD

(a) 10 km in 30 minutes, so in 60 minutes: $10 \times 60 \div 30 = 20$ km/h

(b) The steeper line is the faster part. On the way back 10 km takes 40 minutes: $10 \times 60 \div 40 = 15$ km/h

M1 distance $\div$ time $\cdot$ A1 $\cdot$ B1 B1



✓ (a) 4 litres; (b) 42 pints

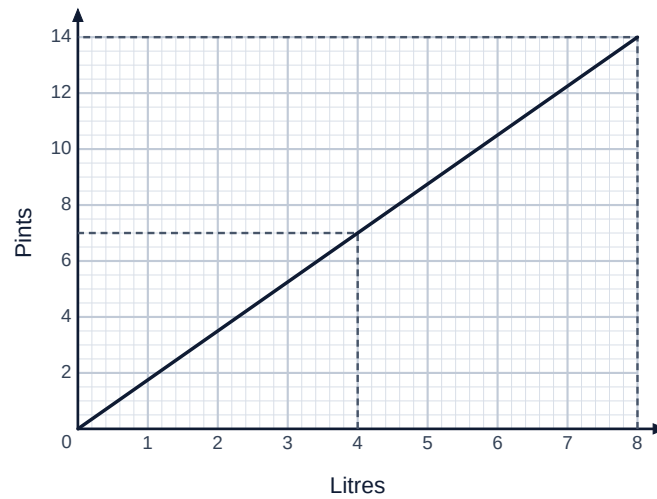
Q18 · ● Secure · 3 marks

METHOD

(a) Across from 7 pints to the line, then down: 4 litres

(b) 8 litres = 14 pints from the graph; $24 = 8 \times 3$, so 24 litres = $14 \times 3 = 42$ pints

B1 · M1 A1



✓ (a) 50, 90, 110; (b) graph drawn (see below)

Q19 · ● Secure · 4 marks

METHOD

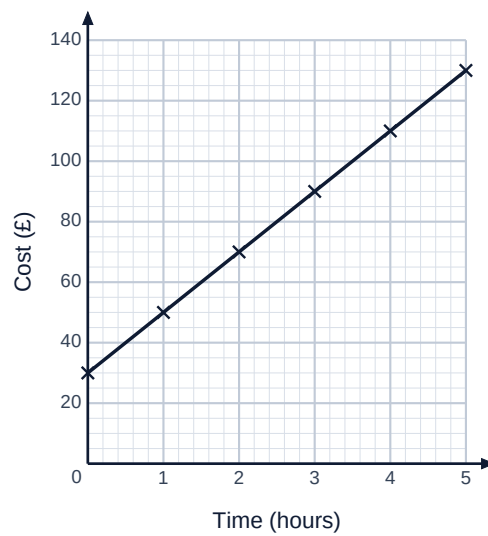
(a) 1 hour: $\pounds 30 + 1 \times \pounds 20 = \pounds 50$; 3 hours: $\pounds 30 + 3 \times \pounds 20 = \pounds 90$; 4 hours: $\pounds 30 + 4 \times \pounds 20 = \pounds 110$

B2 all correct (B1 for one or two)

Plot the points from the table and join them with a ruled straight line starting at (0, 30).

B1 points · B1 line

Time (hours)	0	1	2	3	4	5
Cost (£)	30	50	70	90	110	130



✓ (a) 13, 18, 33; (b) graph drawn (see below)

Q20 · ● Secure · 4 marks

METHOD

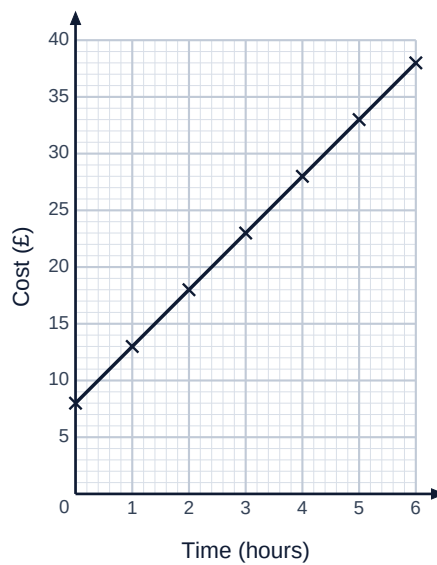
(a) 1 hour: $\pounds 8 + 1 \times \pounds 5 = \pounds 13$; 2 hours: $\pounds 8 + 2 \times \pounds 5 = \pounds 18$; 5 hours: $\pounds 8 + 5 \times \pounds 5 = \pounds 33$

B2 all correct (B1 for one or two)

Plot the points from the table and join them with a ruled straight line starting at (0, 8).

B1 points · B1 line

Time (hours)	0	1	2	3	4	5	6
Cost (£)	8	13	18	23	28	33	38



✓ (a) 20 minutes; (b) 2 km; (c) 12 km/h

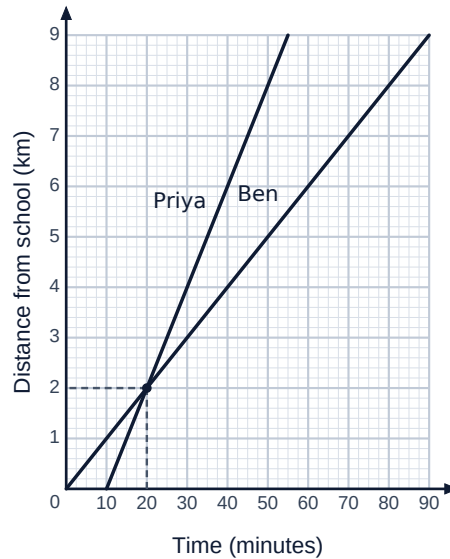
Q21 · ● Greater Depth · 4 marks

METHOD

(a)(b) The lines cross at (20, 2): 20 minutes, 2 km from school

(c) Priya cycles 9 km in 45 minutes, so in 60 minutes: $9 \times 60 \div 45 = 12$ km/h

B1 · B1 · M1 A1



✓ (a) 8, 14; (b) graph drawn (see below);
(c) 7 miles

Q22 · ● Greater Depth · 5 marks

METHOD

(a) 4 miles: $\pounds 2 + 4 \times \pounds 1.50 = \pounds 8$; 8 miles: $\pounds 2 + 8 \times \pounds 1.50 = \pounds 14$

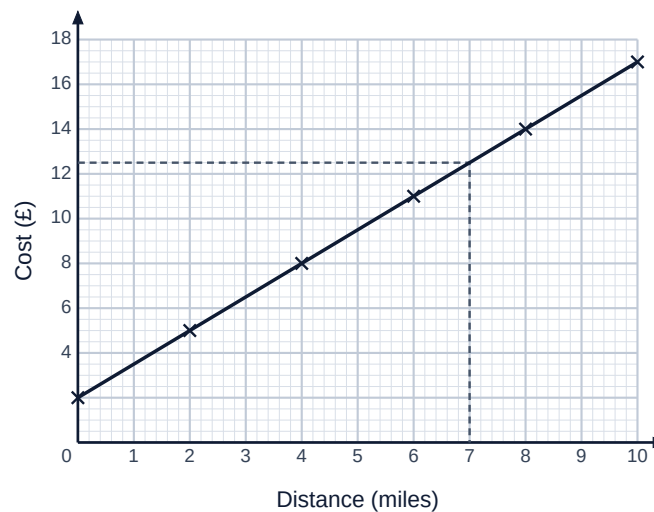
B2 all correct (B1 for one or two)

Plot the points from the table and join them with a ruled straight line starting at (0, 2).

B1 points · B1 line

(c) Across from $\pounds 12.50$ to the line, then down: 7 miles · B1

Distance (miles)	0	2	4	6	8	10
Cost (£)	2	5	8	11	14	17



✓ (a) 30 minutes; (b) 3 km; (c) 12 km/h

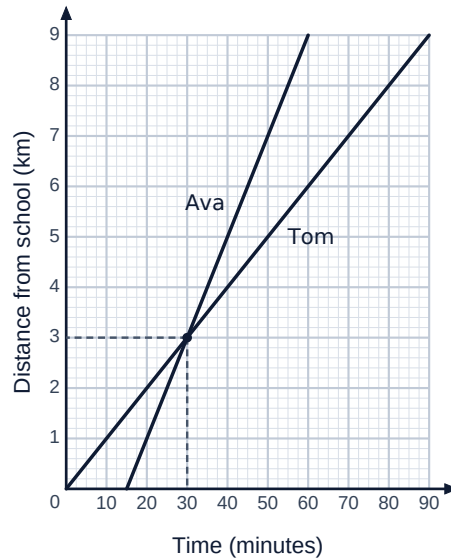
Q23 • ● Greater Depth • 4 marks

METHOD

(a)(b) The lines cross at (30, 3): 30 minutes, 3 km from school

(c) Ava cycles 9 km in 45 minutes, so in 60 minutes: $9 \times 60 \div 45 = 12$ km/h

B1 • B1 • M1 A1



✓ (a) 30 minutes; (b) 2 km; (c) 12 km/h

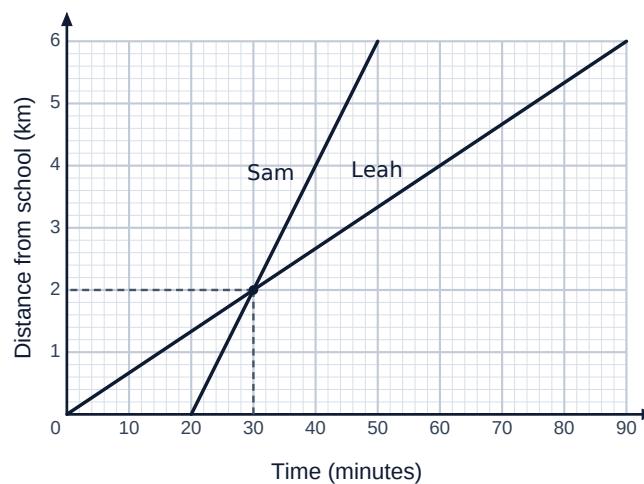
Q24 • ● Greater Depth • 4 marks

METHOD

(a)(b) The lines cross at (30, 2): 30 minutes, 2 km from school

(c) Sam cycles 6 km in 30 minutes, so in 60 minutes: $6 \times 60 \div 30 = 12$ km/h

B1 • B1 • M1 A1



✓ (a) 180, 210; (b) graph drawn (see below); (c) 0.5 hours

Q25 · ● Greater Depth · 5 marks

METHOD

(a) 4 hours: $\pounds 60 + 4 \times \pounds 30 = \pounds 180$; 5 hours: $\pounds 60 + 5 \times \pounds 30 = \pounds 210$

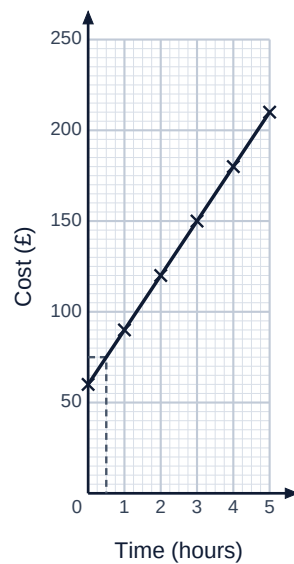
B2 all correct (B1 for one or two)

Plot the points from the table and join them with a ruled straight line starting at (0, 60).

B1 points · B1 line

(c) Across from $\pounds 75$ to the line, then down: 0.5 hours · B1

Time (hours)	0	1	2	3	4	5
Cost (£)	60	90	120	150	180	210



✓ (a) £50; (b) London, by £12

Q26 · ● Greater Depth · 3 marks

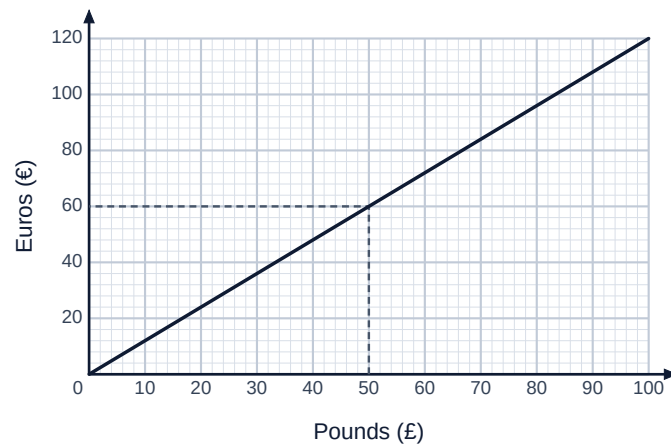
METHOD

(a) Across from €60 to the line, then down: £50

(b) $€240 = 4 \times €60 = 4 \times £50 = £200$

$£200 > £188$: cheaper in London by £12

B1 · M1 · A1



✓ (a) £25; (b) London, by £12

Q27 · ● Greater Depth · 3 marks

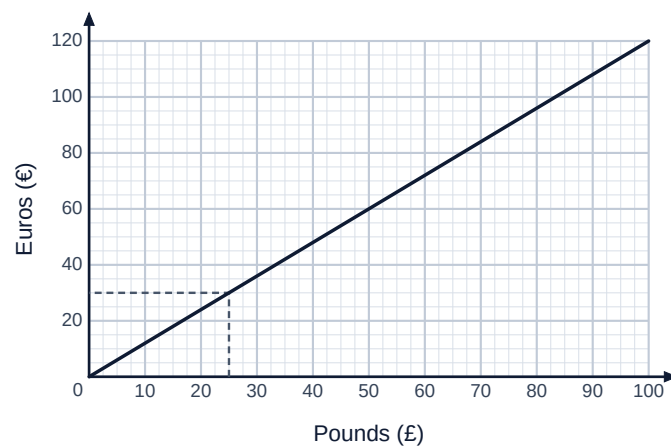
METHOD

(a) Across from €30 to the line, then down: £25

(b) $€120 = 4 \times €30 = 4 \times £25 = £100$

$£100 > £88$: cheaper in London by £12

B1 · M1 · A1



✓ (a) 45 minutes; (b) 4.5 km; (c) 18 km/h

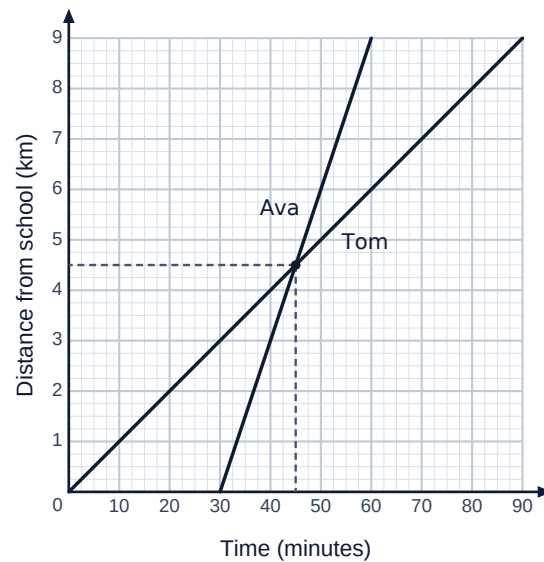
Q28 • ● Greater Depth • 4 marks

METHOD

(a)(b) The lines cross at (45, 4.5): 45 minutes, 4.5 km from school

(c) Ava cycles 9 km in 30 minutes, so in 60 minutes: $9 \times 60 \div 30 = 18$ km/h

B1 • B1 • M1 A1



✓ (a) £30; (b) Paris, by £5

Q29 • ● Greater Depth • 3 marks

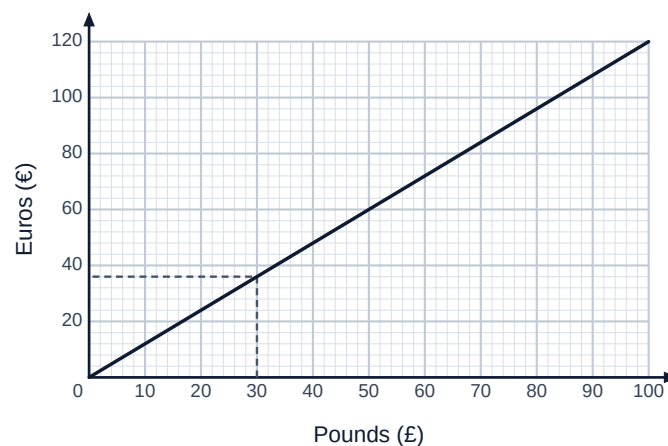
METHOD

(a) Across from €36 to the line, then down: £30

(b) $€108 = 3 \times €36 = 3 \times £30 = £90$

$£90 < £95$: cheaper in Paris by £5

B1 • M1 • A1



✓ (a) 7, 9; (b) graph drawn (see below);
(c) 30 minutes

Q30 · ● Greater Depth · 5 marks

METHOD

(a) 40 minutes: $£5 + 40 \times 5p = £7$; 80 minutes: $£5 + 80 \times 5p = £9$

B2 all correct (B1 for one or two)

Plot the points from the table and join them with a ruled straight line starting at (0, 5).

B1 points · B1 line

(c) Across from £6.50 to the line, then down: 30 minutes · B1

Minutes	0	20	40	60	80	100
Cost (£)	5	6	7	8	9	10

