

Oxford Revise | Edexcel GCSE Maths Higher | Answers

Chapter 7 Real-life graphs

Question	Answer	Extra information	Marks
7.1 (a)	The graph ends where she finishes the race, which is at 45 minutes.		1
7.1 (b)	10 minutes after the race starts		1
7.1 (c)	Krystyna accelerates at a steady rate for 15 minutes until she reaches 12 km/h. She then runs at a steady pace for 30 minutes, until stopping.		3
7.1 (d)	Distance travelled = area under graph. Split the area into a triangle, and a rectangle. 15 minutes = $\frac{1}{4}$ hour; 30 minutes = $\frac{1}{2}$ hour Distance = $\frac{1}{2} \times \frac{1}{4} \times 12 + \frac{1}{2} \times 12 = 7.5$ km		3
7.2 (a)	From the graph, you can see that after 1.5 hours, Kai has travelled 30 km.	Distance for 11:00 to 12:00 Distance for 12:00 to 12:30 Correct total distance	1 1 1

Question	Answer	Extra information	Marks
7.2 (b)		1 mark for each correctly plotted line.	2
7.3 (a)	Fixed charge before travelling	Any suitable explanation	1
7.3 (b)	Charge per mile	Accept £5 per mile	1
7.3 (c)	$5 + (12 \times 5) = \text{£}65$	Correct calculation £65	1 1
7.3 (d)	Assume that the rate per mile doesn't change for five miles and over	Any suitable explanation	1
7.4(a)	Week 4	Accept "between weeks 3 and 4"	1
7.4(b)	Weeks 5 and 6	Accept "between weeks 4 and 6"	1

Question	Answer	Extra information	Marks
7.4(c)	$\frac{60}{6} = 10$ $8 < 10$ Plant B grows the slowest	10 Plant B	1 1
7.5	The gradient of L_1 is 3, so the gradient of L_2 is $-\frac{1}{3}$ It passes through $(-2, -1)$ so plug these coordinates into $y = -\frac{1}{3}x + c$ to get $-1 = -\frac{1}{3}(-2) + c$ So $c = -1 - \frac{2}{3} = -\frac{5}{3}$ And thus $y = -\frac{1}{3}(x+5)$ When $y = -3$, the equation becomes: $-3 = -\frac{1}{3}(x+5)$ $9 = x+5$ $x = 4$	Determines gradient of L_1 Determines gradient of L_2 Finds the equation of L_2 Finds the x -coordinate	1 1 1 1
7.6	The gradients, in order, left to right, are $2, -\frac{2}{5}, -\frac{1}{3}, \frac{5}{2}$ So, the 2 nd and 4 th lines are perpendicular: $5y + 2x = 10$ and $-2x + \frac{4}{5}y = -10$	Finding the gradients of each line Identifying which two are negative reciprocals of each other	1 1

