Question	Answer	Mark	Comments
1	**Alternative method 1**		
	280 ÷ 35 or 8	M1	oe eg 80 ÷ 10
	(350 – 280) ÷ (40 – 35) or 70 ÷ 5 or 14	M1	oe
	6	A1	
	Alternative method 2		
	320 or 350 – 320 or 30 or 350 – 280 and 320 – 280 or 70 and 40	M1	oe
	(350 – 320) ÷ 5 or (70 – 40) ÷ 5 or 30 ÷ 5	M1dep	oe
	6	A1	
	Additional Guidance		
	Do not allow a misread from the graph		
	Alt 2 40 must come from 320 – 280 and not 40 hours worked		

Q	Answer	Mark	Comments
2	**Alternative method 1: using different time periods**		
	450 ÷ 30 or 15 or 250 ÷ 10 or 25	M1	oe for any section of the basic rate or the overtime rate eg $\frac{450-150}{30-10}$
	15 and 25	A1	implied by any ratio equivalent to 3 : 5 do not allow as a ratio in the wrong order eg 25 : 15
	3 : 5 or $\frac{3}{5}$: 1 or 1 : $\frac{5}{3}$	B1ft	oe fully simplified ft full simplification of their two values
	Alternative method 2: using equal time periods		
	Four correct readings from equal time periods of at least 5 hours from the two sections of the graph	M1	eg at 5 and 10 hours and at 35 and 40 hours if a reading from 30 is used, there may only be 3 readings a reading of 0 from 0 may be implied
	15 and 25 or correct totals for their equal time periods	A1	eg 10 hours = 150 and 10 hours = 250 implied by any ratio equivalent to 3 : 5 must not be seen as a ratio in the wrong order eg 250 : 150
	3 : 5 or $\frac{3}{5}$: 1 or 1 : $\frac{5}{3}$	B1ft	oe fully simplified ft full simplification of their two values

	Additional Guidance	
2 cont	In alt 2, only three readings are needed if a reading from 30 hours is included in both time periods or a reading of 0 is used eg readings of 300 from 20, 450 from 30 and 700 from 40	M1
	Readings from 10, 20, 30 and 40 should be 150, 300, 450 and 700 For readings from other numbers of hours not giving a multiple of £10 allow the multiple of 10 above or below the reading or any value between, which can then be used to score all three marks eg allow [220, 230] for a reading at 15 hours eg alt 1 readings of 70 at 5 hours, 380 at 25 hours, 450 at 30 hours and 700 at 40 hours, followed by hourly rates of 15.50 and 25 and an answer of 31 : 50 eg alt 2 readings of 370 at 25 hours, 450 at 30 hours, 580 at 35 hours and 700 at 40 hours, followed by totals of 80 and 120 or hourly rates of 16 and 24 and an answer of 2 : 3	M1A1B1ft M1A1B1ft
	For $1\frac{2}{3}$ allow 1.67 or better with correct rounding	
	450 : 250 = 45 : 25 does not get the mark for 25, but gets the final mark if simplified to 9 : 5	
	Ignore units throughout eg answer £3 : £5	M1A1B1
	15 : 25	M1A1B0
	25 : 15 or 25 : 10 not simplified	M1A0B0
	25 : 15 with answer 5 : 3 or 25 : 10 with answer 5 : 2	M1A0B1ft
	Answer 5 : 3 without working implies	M1A0B1ft
	15 : 17.5	M1A0B0
	15 : 17.5 followed by 6 : 7	M1A0B1ft
	20 : 25	M1A0B0
	20 : 25 followed by 4 : 5	M1A0B1ft
	3 : 5 in working with answer 1.5 : 2.5	M1A1B0
	30 : 10 = 3 : 1	M0A0B1ft

Q	Answer	Mark	Comment
3	Explanation that the ratio and graph do not match	B1	eg This is the graph of $y = 2x$, not $y = \frac{1}{2}x$ This is the graph of $x : y = 1 : 2$ It should go through (3, 1.5)
	Explanation that the domain of the graph is incorrect	B1	eg The graph goes from $x = 0$, not $x = -3$
	Additional Guidance		
	3 : 6 is 1 : 2	B1	
	(3, 6) doesn't work	B1	
	The gradient is 2, not $\frac{1}{2}$	B1	
	He got x and y mixed up	B1	
	His graph is not going up in the ratio 2 : 1	B0	
	The gradient is 2	B0	
	He didn't follow the ratio	B0	
	The graph doesn't have negative numbers	B1	
	There are no minuses	B1	
	It doesn't go from –3 to 3	B1	
	The axes should be the same length	B0	

Q	Answer	Mark	Comments
4	Any two of (–2, 2) $\left(-1, 1\frac{1}{2}\right)$ (0, 1) $\left(1, \frac{1}{2}\right)$ (2, 0) $\left(3, -\frac{1}{2}\right)$ (4, –1) or other correct points	M1	may be seen in a table with values assigned to x and y implied by points plotted
	At least two of their points plotted	M1	$\pm\frac{1}{2}$ square implied by a line passing through two of their points
	Single straight line from (–2, 2) to (4, –1)	A1	$\pm\frac{1}{2}$ square ignore line beyond (–2, 2) and (4, –1)
	Additional Guidance		
	Ignore extra points listed or plotted if required line is drawn		
	M marks can be awarded even if incorrect line drawn		
	Correct line from (–2, 2) to (4, –1) within tolerance with no points plotted		M1M1A1