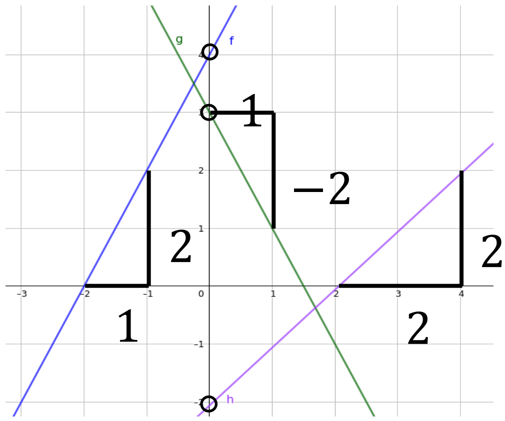
	$y = mx + c$ **Mark scheme.**	
1		Find the gradient by calculating the change in y by the change in x ($\frac{\Delta y}{\Delta x}$). This can be done by drawing simple triangles on the line graph as shown. The value of c is the y-intercept (where the line crosses the y-axis) which can be read off from the graph.
	$f\ gradient = \frac{2}{1} = 2,\ f: y = \ 2x + 4$	[1]
	$g\ gradient = \frac{-2}{1} = -2\quad g:\ y = -2x + 3$	[1]
	$h\ gradient = \frac{2}{2} = 1\quad h: y = x - 2$	[1]
2(a)	$m = \frac{change\ in\ y}{change\ in\ x} = \frac{22 - 10}{11 - 5} = \frac{12}{6} = 2$ $y = 2x + c$	[1] Calculation of gradient, m, from coordinates
	Substituting in values of x and y $10 = 2(5) + c$ $10 = 10 + c$ $c = 0$ $y = 2x$	[1] Final equation
2(b)	$m = \frac{change\ in\ y}{change\ in\ x} = \frac{-11 - -7}{-14 - -2} = \frac{-4}{-12} = \frac{1}{3}$ $y = \frac{1}{3}x + c$	[1] Calculation of gradient, m, from coordinates
	Substituting in values of x and y $-7 = \frac{1}{3}(-2) + c$ $-7 = -\frac{2}{3} + c, \qquad c = -\frac{19}{3}$ $y = \frac{1}{3}x - \frac{19}{3}$	[1] Final equation

Turn over ►

3(a)	$y-3=4(x-2)$ $y-3=4x-8$ $y=4x-8+3$	[1] rearrange to be in the form $y=mx+c$
	$y=4x-5$ $m=4$	[1] gradient
3(b)	$3y-2=5x+2$ $3y=5x+2+2$	[1] rearrange to be in the form $y=mx+c$
	$3y=5x+4$ $y=\frac{5}{3}x+\frac{4}{3}$ $m=\frac{5}{3}$	[1] gradient
3(c)	$(2(3-5x))/y=3$ $3y=2(3-5x)$ $3y=6-10x$	[1] rearrange to be in the form $y=mx+c$
	$y=2-\frac{10}{3}x$; $m=-\frac{10}{3}$	[1] gradient
4	A and D ($y=2x+3$ and $-2x+y=5$)	[1] parallel lines have the same gradient
	B and C ($y=4-2x$ and $-2x-y=4$)	[1] parallel lines have the same gradient
5	D and E ($2y=3(2x-4)$ and $\frac{y}{x}=3$)	[1] parallel lines have the same gradient
	A and C ($y=7x+4$ and $2(3x+4)-y-(1-x)=0$)	[1] parallel lines have the same gradient
	G and B ($6y-3x+2=0$ and $(x+1)^2-x^2=4y$)	[1] parallel lines have the same gradient
	H and F ($x=y$ and $y-2(x+3)=-(6+x)$)	[1] parallel lines have the same gradient
6(a)	$\frac{Change\ in\ y}{Change\ in\ x}=\frac{25}{2}=12.5$	[1] gradient
	$y=12.5x+1075$	[1] final equation
6(b)	m represents the speed of the car	[1] Correct statement
	$m\ is\ the\ change\ in\ distance\ over\ the\ change\ in\ time$	[1] Correct explanation

7(a)	EF and GH have the same gradient.	[1] parallel lines have the same gradient
	$m = \frac{change\ in\ y}{change\ in\ x} = \frac{8-a}{2a-5} = 5$	[1] gradient
	$8 - a = 5(2a - 5)$ $8 - a = 10a - 25$ $11a = 33$ $a = 3$	[1] finding the value of a
7(b)	$y = 5x + c$ $3 = 5(5) + c$ $3 = 25 + c$ $c = -22$	[1] finding c
	$y = 5x - 22$	[1] final equation

END