

Fractions with Factors Past Paper Answers Edexcel – None Calculator

1.

(a)	$\frac{2(y-6)}{(y-6)(y-2)}$	$\frac{2}{y-2}$	3	M1 $2(y-6)$ M1 $(y-6)(y-2)$ A1 cao
(b)	$\frac{3(x+5) - (x-4)}{(x-4)(x+5)}$	$\frac{3(x+5) - (x-4)}{(x-4)(x+5)}$	2	M1 for $3(x+5)$ or $3x+15$ or $3x+5$ or $-(x-4)$ or $-x+4$ or $-x-4$ or $(x-4)(x+5)$ A1 for $\frac{3(x+5) - (x-4)}{(x-4)(x+5)}$ oe

2.

Question	Working	Answer	Mark	Notes
	$\frac{2x^2 - 9x - 5}{4x^3 + 2x^2}$ $\frac{(2x+1)(x-5)}{2x^2(2x+1)}$	$\frac{x-5}{2x^2}$	3	M1 for factorising the numerator correctly M1 for fully factorising the denominator correctly A1 for $\frac{x-5}{2x^2}$ oe eg. $\frac{-5+x}{2x^2}$

3.

	$\frac{2x(x+3)}{(x-5)(x+3)} =$	$\frac{2x}{x-5}$	3	B1 for $2x(x+3)$ B1 for $(x-5)(x+3)$ oe B1 cao
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4.

		$\frac{2x-1}{x-3}$	3	M1 for $(2x-1)(x+3)$ M1 for $(x-3)(x+3)$ A1 cao
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5.

Question	Working	Answer	Mark	Notes
	$\frac{x^2 - 2x - 15}{x^2 - 4x - 21} = \frac{(x-5)(x+3)}{(x-7)(x+3)}$	$\frac{x-5}{x-7}$	3	M1 attempt to factorise numerator (at least one bracket correct) or $(x \pm 5)(x \pm 3)$ M1 attempt to factorise denominator (at least one bracket correct) or $(x \pm 7)(x \pm 3)$ A1 oe

6.

	$\frac{3(a-b)+2b}{b(a-b)}$ $\frac{3a-3b+2b}{b(a-b)}$	$\frac{3a-b}{b(a-b)}$	3	M1 for a common denominator of $b(a-b)$ oe M1 for $\frac{3(a-b)+2b}{'b(a-b)'} or \frac{3(a-b)}{'b(a-b)'} + \frac{2b}{'b(a-b)'}$ A1 for $\frac{3a-b}{b(a-b)}$ or $\frac{3a-b}{ba-b^2}$
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7.

		$\frac{x}{2x+1}$	3	B1 for $x(x-3)$ B1 for $(2x+1)(x-3)$ B1 for $\frac{x}{2x+1}$
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8.

Question	Working	Answer	Mark	Notes
	$\frac{2x}{x-1} - \frac{7x-3}{x^2-1}$ $= \frac{2x(x+1)}{x^2-1} - \frac{7x-3}{x^2-1}$ $= \frac{2x^2+2x-7x+3}{x^2-1}$ $= \frac{2x^2-5x+3}{x^2-1}$ $= \frac{(2x-3)(x-1)}{(x+1)(x-1)}$ $= \frac{2x-3}{x+1}$	$\frac{2x-3}{x+1}$	4	B1 for $x^2-1=(x+1)(x-1)$ M1 for correct process to obtain any common denominator M1 for correct expansion and simplification of numerator A1 cao

9.

$\frac{15}{30x} + \frac{6}{30x} - \frac{10}{30x}$	$\frac{11}{30x}$	2	M1 for attempt to use a correct common denominator with at least 2 correct equivalent fractions A1 for $\frac{11}{30x}$ oe
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10.

	$\frac{7x-6}{x(2-x)}$	3	M1 for intention to use $x(2-x)$ as the denominator M1 for $\frac{4x-3(2-x)}{x(2-x)}$ oe A1 cao allow $2x-x^2$ as a denominator
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11.

	$\frac{(x-5)(x+3)}{(x+3)(2x+1)}$	$\frac{x-5}{2x+1}$	3	M1 for correct factorisation of numerator M1 for correct factorisation of denominator A1 for $\frac{x-5}{2x+1}$
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12.

	$\frac{x+3}{4} + \frac{x-5}{3}$ $= \frac{3(x+3) + (x-5)}{12}$	$\frac{7x-11}{12}$	3	M1 resolution of denominator to 12 M1 expansion and simplification of brackets A1 cao
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