Quick Wits

Higher 1

Rationalise the Denominator

1) $\frac{1}{\sqrt{5}}$

2) $\frac{2a}{\sqrt{a}}$

Simplify and Factorise

$10p + 2q + 15p + 3q$

Expand and Simplify

1) $\frac{a}{2}(6ab - 2a)$

2) $(3x - y)(x - 2y)$

Multiply and Divide Fractions

1) $\frac{4}{5} \times \frac{1}{2}$

2) $\frac{5}{6} \div \frac{1}{3}$

Factorise and Solve

$b^2 + 2b - 3 = 0$

Reasoning with Fractions

John says "when you double $2\frac{1}{2}$ you get $4\frac{1}{4}$." Is John correct?

Give a reason for your answer.

Yes ☐ No ☐

Simplify

1) $\frac{2x^2+7x+6}{2x+3}$

2) $\frac{x^2+4x-5}{x^2+2x-15}$

Quick Wits

Higher 1

Rationalise the Denominator

1) $\frac{1}{\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{5}}{5}$

2) $\frac{2a}{\sqrt{a}} \times \frac{\sqrt{a}}{\sqrt{a}} = \frac{2a\sqrt{a}}{a} = 2\sqrt{a}$

Multiply and Divide Fractions

1) $\frac{4}{5} \times \frac{1}{2} = \frac{4}{10} = \frac{2}{5}$

2) $\frac{5}{6} \div \frac{1}{3} = \frac{5}{6} \times \frac{3}{1}$
$= \frac{15}{6} = 2\frac{3}{6} = 2\frac{1}{2}$

Simplify and Factorise

$10p + 2q + 15p + 3q$
$= 25p + 5q$
$= 5(5p + q)$

Factorise and Solve

$b^2 + 2b - 3 = 0$
$(b + 3)(b - 1) = 0$
Solutions $b = -3$ and $b = 1$

Simplify

1) $\frac{2x^2+7x+6}{2x+3} = \frac{(2x+3)(x+2)}{2x+3} = x + 2$

2) $\frac{x^2+4x-5}{x^2+2x-15} = \frac{(x+5)(x-1)}{(x+5)(x-3)} = \frac{x-1}{x-3}$

Expand and Simplify

1) $\frac{a}{2}(6ab - 2a) = \frac{6a^2b}{2} - \frac{2a^2}{2}$
$= 3a^2b - a^2$

2) $(3x - y)(x - 2y)$
$= 3x^2 - 6xy - xy + 2y^2$
$= 3x^2 - 7xy + 2y^2$

Reasoning with Fractions

John says "when you double $2\frac{1}{2}$ you get $4\frac{1}{4}$." Is John correct?

Give a reason for your answer.

Yes ☐ No ☑

$2\frac{1}{2} \times 2 = \frac{5}{2} \times \frac{2}{1} = \frac{10}{2} = 5$

Answers