

+5

The Quiz

Simplify each and state the excluded values.

1)  $\frac{b^2 + 3b - 54}{b^2 - 2b - 24}$

$\frac{(b+9)(b-6)}{(b-6)(b+4)}$

$\frac{b+9}{b+4}$

Simplify each expression.

2)  $\frac{28n - 7n^2}{5n + 50} \cdot \frac{n^2 + 7n - 30}{n^2 - 7n + 12}$

$\frac{-7n(n-4)}{5(n+10)} \cdot \frac{(n+10)(n-3)}{(n-3)(n-4)}$

$\frac{-7n}{5}$

3)  $\frac{7p + 56}{7p + 42} \div \frac{p^2 - 4p - 32}{p^2 - 2p - 48}$

$\frac{7(p+8)}{7(p+6)} \cdot \frac{(p-8)(p+6)}{(p-8)(p+4)}$

$\frac{p+8}{p+4}$

4)  $\frac{6}{4x} + \frac{5}{2y^2} \cdot \frac{2x}{2x}$

$\frac{6y^2 + 10x}{4xy^2}$

over

$$\frac{2uv^2}{2uv^2} \cdot \frac{5u}{5} - \frac{4u}{2uv^2} \cdot \frac{5}{5} = \frac{10u^2v^2 - 20u}{10uv^2} = \frac{10u(v^2 - 2)}{10uv^2}$$

$$\downarrow$$

$$\frac{v^2}{v^2} \frac{u}{1} - \frac{2}{v^2} = \frac{v^2u - 2}{v^2}$$

$$6) \frac{6}{2m-1} + \frac{3}{m+4} = \frac{6(m+4) + 3(2m-1)}{(2m-1)(m+4)} = \frac{6m+24+6m-3}{LCD}$$

$$\frac{12m+21}{(2m-1)(m+4)} = \frac{3(4m+7)}{(2m-1)(m+4)}$$

Doesn't help.

$$7) \frac{2(3a+4)}{2(3a+4)} \cdot \frac{6}{3a} + \frac{3a-2}{6a^2+8a} \cdot \frac{3}{3} = \frac{12(3a+4) + 3(3a-2)}{6a(3a+4)}$$

$$\frac{2(3a+4)}{2(3a+4)} \cdot \frac{6}{a} + \frac{3a-2}{6a(3a+4)}$$

$$\frac{36a + 48 + 9a - 6}{LCD}$$

$$\frac{45a + 42}{6a(3a+4)} = \frac{3(15a+14)}{6a(3a+4)}$$

$$\frac{4(3a+4) + 3a-2}{2a(3a+4)} = \frac{12a+16+3a-2}{2a(3a+4)}$$

$$8) \frac{4}{3n} + \frac{5}{3n^2+24n+45}$$

$$\frac{4}{3n} + \frac{5}{3(n^2+8n+15)} = \frac{4}{3n} + \frac{5}{3(n+3)(n+5)}$$

$$\frac{4(n+3)(n+5) + 5n}{3n(n+3)(n+5)} = \frac{4(n^2+8n+15) + 5n}{LCD} = \frac{4n^2+32n+60+5n}{LCD}$$

$$\frac{4n^2+37n+60}{3n(n+3)(n+5)}$$

The Quiz

Simplify each and state the excluded values.

1)  $\frac{n^2 + 8n - 9}{-n^2 + 6n - 5}$

$\frac{(n+9)(n-1)}{-(n^2 - 6n + 5)} \rightarrow \frac{(n+9)(n-1)}{-(n-5)(n-1)} \quad \left( -\frac{n+9}{n-5} \right)$

Simplify each expression.

2)  $\frac{25x - 15}{7x + 63} \cdot \frac{7x + 63}{30x - 18}$

$\frac{5(5x-3)}{7(x+9)} \cdot \frac{1}{6(5x-3)} \quad \left( \frac{5}{6} \right)$

3)  $\frac{6x - 42}{x^2 - 49} \div \frac{3}{3x + 21}$

$\frac{6(x-7)}{(x+7)(x-7)} \cdot \frac{3(x+7)}{3} \quad \left( \frac{6(x-7)}{x-7} \right)$

4)  $\frac{2x}{5y} + \frac{3}{5x}$

$\frac{2x^2 + 3y}{5xy}$

$$5) \frac{3n}{4} - \frac{2n}{3m} = \frac{9m - 8n}{12m}$$

$$6) \frac{6}{2a} + \frac{5}{2a(5a+1)}$$

$$\frac{6(5a+1) + 5}{2a(5a+1)}$$

$$\frac{30a + 6 + 5}{2a(5a+1)}$$

$$\frac{4b^2}{4b^3}$$

$$7) \frac{b+5}{b+6} + \frac{6}{4b^3}$$

$$\frac{b+6}{b+6}$$

$$\frac{4b^3(b+5) + 6(b+6)}{4b^3(b+6)}$$

$$\frac{4b^4 + 20b^3 + 6b + 36}{LCD}$$

~~$$\frac{4b^4 + 20b^3 + 6b + 36}{LCD}$$~~

$$\frac{r+3}{r+3}$$

$$8) \frac{2}{5r^2 - 10r} - \frac{6}{r+3}$$

$$\frac{2(r+3) - 6(5r^2 - 10r)}{5r(r-2)(r+3)}$$

$$2r + 6 - 30r^2 + 60r$$

$$\frac{-30r^2 + 62r + 6}{5r(r-2)(r+3)}$$

$$\frac{4b^4 + 20b^3 + 6b + 36}{LCD}$$

$$2(2b^4 + 10b^3 + 3b + 18)$$

$$\frac{2b^4 + 10b^3 + 3b + 18}{4b^3(b+6)}$$

$$\frac{2b^4 + 10b^3 + 3b + 18}{2b^3(b+6)}$$