Simplifying Rational Expressions

May 8-11:34 AM

$$\frac{a-6}{10a-60} = \frac{a-6}{10(a-6)}$$

$$= \frac{1}{10}$$

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$$\frac{x^2 - 8x + 12}{x - 2} = \frac{(x-6)(x-2)}{x-2} = x-6$$

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$$\frac{6b - 48}{b - 8} = \frac{6(b-8)}{b-8} = \frac{6}{1}$$

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$$\frac{b^2 - 6b - 27}{b^2 - 11b + 18} = \frac{(b-9)(b+3)}{(b-9)(b-2)}$$

$$= \frac{b+3}{b-2}$$

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$$\frac{9k^2 - 63k}{k^2 + k - 56} = \frac{9k(k-7)}{(k+8)(k-7)}$$

$$= \frac{9k}{k+8}$$

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$$\frac{9n-27}{9n-30} = \frac{9(n-3)}{3(3n-10)} = \frac{3(n-3)}{(3n-10)}$$

$$\frac{9}{3} \cdot \frac{(n-3)}{(3n-10)}$$

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$$\frac{x^2+18x+80}{x^2+11x+10} = \frac{(x+10)(x+8)}{(x+10)(x+1)}$$

$$= \frac{x+8}{x+1}$$

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Multiply & Divide

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Simplify:

$\frac{20}{24} = \frac{10}{12} = \frac{5}{6}$

$\frac{10}{3} \cdot \frac{6}{25} = \frac{60}{75} = \frac{4}{5}$

$\frac{20}{30} \div \frac{5}{4} = \frac{20}{30} \cdot \frac{4}{5} = \frac{8}{15}$

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Simplify: $\dfrac{x^2+5x-6}{x^2-36}$

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Simplify: $\dfrac{y^2-49}{y^2-8y+7}$

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Simplify: $\frac{9x^5}{5} \bullet \frac{6}{x^7} \bullet \frac{5x}{18} = \frac{270x^6}{90x^7}$

$\frac{3x^6}{x^7} = 3x^{-1} = \frac{3}{x}$

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Simplify: $\frac{3}{4x^2} \bullet \frac{7}{14} = \frac{168x^3}{336x^7}$

$\frac{1x^3}{2x^7} = \frac{1}{2x^4}$

$\frac{1}{2x^4}$

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Simplify: $\dfrac{x+1}{x^2+2x-3} \bullet \dfrac{x^2+x-6}{x^2-2x-3}$

$$\frac{x+1}{(x+3)(x-1)} \cdot \frac{(x+3)(x-2)}{(x-3)(x+1)}$$

$$\frac{x-2}{(x-1)(x-3)}$$

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Simplify: $\dfrac{x^2+4x-12}{x^2+11x+30} \bullet \dfrac{x^2-2x-35}{x+4}$

$$\frac{(x+6)(x-2)}{(x+6)(x+5)} \cdot \frac{(x-7)(x+5)}{x+4}$$

$$\frac{(x-2)(x-7)}{x+4}$$

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Simplify: $\dfrac{x^2-25}{x^2+2x-3} \div \dfrac{x+5}{x^2-3x-18}$

$$\frac{x^2-25}{x^2+2x-3} \cdot \frac{x^2-3x-18}{x+5}$$

$$\frac{(x+5)(x-5)}{(x+3)(x-1)} \cdot \frac{(x+5)(x-6)}{x+5} = \frac{(x-5)(x-6)}{x-1}$$

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Simplify: $\dfrac{x^2-2x+1}{x^2+6x+8} \div \dfrac{x^2-1}{x^2+3x+2}$

$$\frac{x^2-2x+1}{x^2+6x+8} \cdot \frac{x^2+3x+2}{x^2-1}$$

$$\frac{(x-1)(x-1)}{(x+4)(x+2)} \cdot \frac{(x+2)(x+1)}{(x+1)(x-1)} = \frac{x-1}{x+4}$$

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Homework

1-20 ODD

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