

Name: \_\_\_\_\_

# Simplifying Rational Polynomial Expressions

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Simplify

①  $\frac{x^2 + x - 30}{3x^2 + 18x}$

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②  $\frac{14x^4y}{18x^3y^2}$

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③  $\frac{3 + 13x - 10x^2}{25x^2 - 1}$

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④  $\frac{2x^3 + 16x^2 + 24x}{x^2 - x - 6}$

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⑤  $\frac{9x^2 + 81x}{x^3 + 8x^2 - 9x}$

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⑥  $\frac{y^2 - 11y + 18}{y^2 + 2y - 8}$

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⑦  $\frac{x^2 + 2x - 3}{x + 3}$

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⑧  $\frac{-x^3 - 2x^2 + 2x + 4}{x^2 + 5x + 6}$

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## Answers

$$\textcircled{1} \frac{x^2 + x - 30}{3x^2 + 18x}$$

$$\textcircled{2} \frac{14x^4y}{18x^3y^2}$$

$$\frac{x - 5}{3x}$$

$$\frac{7x}{9y}$$

$$\textcircled{3} \frac{3 + 13x - 10x^2}{25x^2 - 1}$$

$$\textcircled{4} \frac{2x^3 + 16x^2 + 24x}{x^2 - x - 6}$$

$$\frac{3 - 2x}{5x - 1}$$

$$\frac{2x(x + 6)}{x - 3}$$

$$\textcircled{5} \frac{9x^2 + 81x}{x^3 + 8x^2 - 9x}$$

$$\textcircled{6} \frac{y^2 - 11y + 18}{y^2 + 2y - 8}$$

$$\frac{9}{x - 1}$$

$$\frac{y - 9}{y + 4}$$

$$\textcircled{7} \frac{x^2 + 2x - 3}{x + 3}$$

$$\textcircled{8} \frac{-x^3 - 2x^2 + 2x + 4}{x^2 + 5x + 6}$$

$$x - 1$$

$$\frac{2 - x^2}{x + 3}$$