

Exit Ticket Sample Solutions

1. Find the quotient of $\frac{x-6}{x-8}$ using any method.

$$1 + \frac{2}{x-8}$$

2. Find the quotient of $\frac{9x^3-12x^2+4}{x-2}$ by using either long division or the reverse tabular method.

$$(9x^2 + 6x + 12) + \frac{28}{x-2}$$

Homework Problem Set Sample Solutions

1. For each pair of problems, find the first quotient by factoring the numerator. Find the second quotient by either method (long division or reverse tabular). Can the 1st quotient help you get the 2nd one? Explain.

a. $\frac{3x-6}{x-2}$

3

$$\frac{3x-9}{x-2}$$

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

b. $\frac{x^2-5x-14}{x-7}$

x + 2

$$\frac{x^2-5x+2}{x-7}$$

$$(x+2) + \frac{16}{x-7}$$

$$c. \frac{x^3 + 1}{x + 1}$$

$$x^2 - x + 1$$

$$\frac{x^3}{x + 1}$$

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

$$d. \frac{x^2 - 13x + 36}{x - 4}$$

$$x - 9$$

$$\frac{x^2 - 13x + 30}{x - 4}$$

$$(x - 9) - \frac{6}{x - 4}$$

Find each quotient by using the reverse tabular method.

$$3. \frac{x^3 - 9x^2 + 5x + 2}{x - 1}$$

$$(x^2 - 8x - 3) - \frac{1}{x - 1}$$

$$4. \frac{x^2 + x + 10}{x + 12}$$

$$(x - 11) + \frac{142}{x + 12}$$

$$5. \frac{2x + 6}{x - 8}$$

$$2 + \frac{22}{x - 8}$$

$$6. \frac{x^2 + 8}{x + 3}$$

$$(x - 3) + \frac{17}{x + 3}$$

Find each quotient by using long division.

$$7. \frac{x^4 - 9x^2 + 10x}{x + 2}$$

$$(x^3 - 2x^2 - 5x + 20) - \frac{40}{x + 2}$$

$$8. \frac{x^5 - 35}{x - 2}$$

$$(x^4 + 2x^3 + 4x^2 + 8x + 16) - \frac{3}{x - 2}$$

$$9. \frac{x^2}{x - 6}$$

$$(x + 6) + \frac{36}{x - 6}$$

$$10. \frac{x^3 + 2x^2 + 8x + 1}{x + 5}$$

$$(x^2 - 3x + 23) - \frac{114}{x + 5}$$

$$11. \frac{x^3 + 2x + 11}{x - 1}$$

$$(x^2 + x + 3) + \frac{14}{x - 1}$$

$$12. \frac{x^4 + 3x^3 - 2x^2 + 6x - 15}{x}$$

$$(x^3 + 3x^2 - 2x + 6) - \frac{15}{x}$$