

Simplify the rational expressions.

1.
$$\frac{25c^2d}{15cd^3}$$

2.
$$\frac{-35x^3y^7}{7x^5y^3}$$

3.
$$\frac{(x-9)(x+2)}{(x^2-81)(x^2-4)}$$

4.
$$\frac{x^2-36}{x^2+12x+36}$$

Multiply the following rational expressions.

5.
$$\frac{4a^5}{ab^3} \cdot \frac{b^7}{36}$$

6.
$$\frac{(x+1)(x+7)}{x+1} \cdot \frac{x+1}{x^2-49}$$

7.
$$\frac{x^2-10x+25}{x^2-25} \cdot \frac{x+5}{x-5}$$

8.
$$\frac{x^2-6x+8}{3x-12} \cdot \frac{x^2+5x+6}{x^2-4}$$

Divide the following rational expressions.

9. $\frac{11x^2y}{x^3} \div \frac{22xy}{x^4}$

10. $\frac{3x^2 + 4x + 1}{x^2 - 1} \div \frac{9x^2 - 1}{x + 1}$

11. $\frac{\frac{x^2 - 4}{x^2 - 1}}{\frac{x - 2}{x - 1}}$

Graph the following equations. Make sure to label the vertical and horizontal asymptote, and determine the Domain and Range.

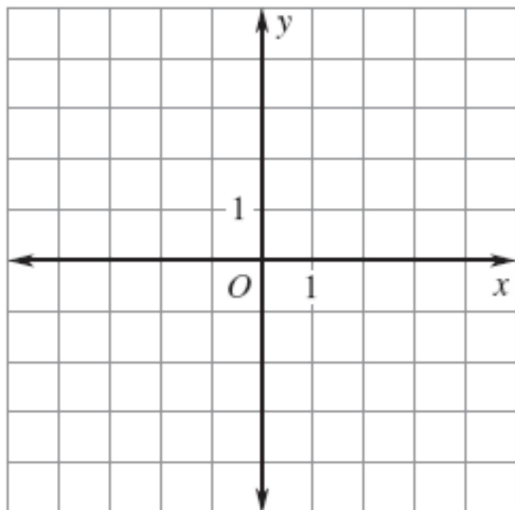
12. $y = \frac{1}{x}$

VA: _____

HA: _____

Domain: _____

Range: _____



13. $y = \frac{-1}{x + 2}$

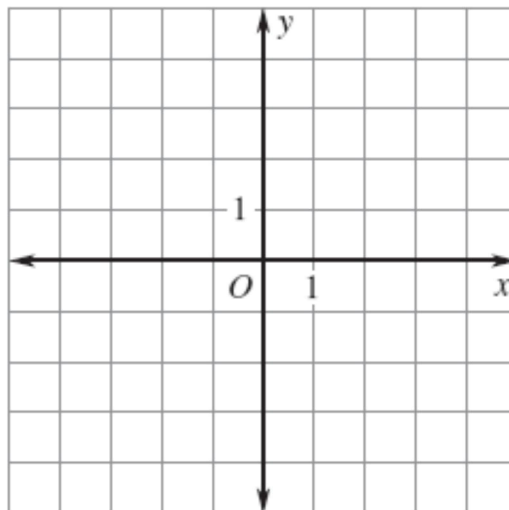
...what does the negative do?

VA: _____

HA: _____

Domain: _____

Range: _____



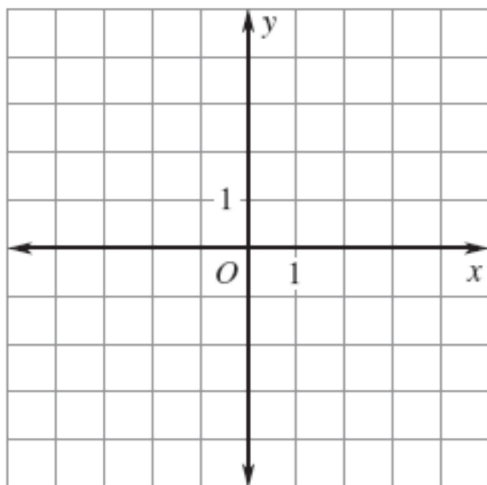
14. $y = \frac{1}{x} + 2$

VA: _____

HA: _____

Domain: _____

Range: _____



15. $y = \frac{1}{x-3} + 2$

VA: _____

HA: _____

Domain: _____

Range: _____

