

1. Write a symbolic representation (formula) for $f(x)$ that divides 2 by the quantity x minus 3.”

1. _____

2. Let $f(x) = \frac{2}{x^2 - 4}$.

(a) Evaluate $f(-1)$.

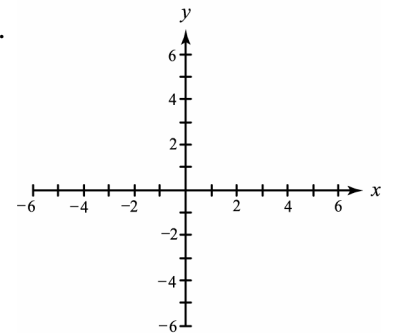
2. (a) _____

(b) Write the domain of f in set-builder notation.

(b) _____

3. Graph $f(x) = \frac{2}{x^2 - 4}$. Show any vertical asymptotes as dashed lines.

3.



In #4 and #5, simplify the expression.

4. $\frac{3-t}{t-3}$

4. _____

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

5. _____

In #6 through #10, simplify.

6. $\frac{x^2 + 9}{x^2 - 9} \cdot \frac{x - 3}{x + 3}$

6. _____

7. $\frac{1}{2x^2} \div \frac{1}{6x^4}$

7. _____

8. $\frac{x}{x-3} - \frac{2}{x+3}$

8. _____

9. $\frac{2}{x-3} - \frac{5}{(x-3)^2}$

9. _____

10. $\frac{\frac{1}{x} - \frac{1}{x-2}}{\frac{2}{x} + \frac{5}{x-2}}$

10. _____

In #11 through #13, solve. Check your result.

11. $2 = \frac{8}{2x-1}$

11. _____

12. $\frac{x+5}{3-x} - \frac{2x+7}{3-x} = 0$

12. _____

13. $\frac{2}{4x^2-9} + \frac{1}{2x-3} = \frac{3}{2x+3}$

13. _____

14. A triangle has sides with lengths 6, 11, and 14. Find the longest side of a similar triangle with a shortest side of length 9.

14. _____

15. Suppose y varies directly as x . If $y = 9$ when $x = 15$, find y when $x = 10$.

15. _____

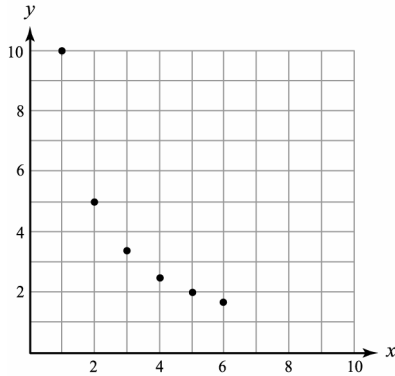
16. Use the table to determine whether the data represent direct or inverse variation. Find an equation that models the data.

16. _____

x	2	4	7	11
y	5	10	17.5	27.5

17. Determine whether the data represent direct or inverse variation. Find an equation that models the data.

17. _____



In #18 and #19, divide.

18. $\frac{12a^3 - 6a^2}{6a^2}$

18. _____

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

19. _____

20. Suppose that one hose can fill a small pool in 4 hours, and a second hose can fill the pool in 3 hours.

- (a) Write an equation whose solution gives the time needed for the hoses, working together, to fill the pool.
- (b) Solve the equation in part (a).

20. (a) _____

(b) _____