

1. Write a symbolic representation (formula) for $f(x)$ that divides 3.7 by the quantity x plus 2.1.

1. _____

2. Let $f(x) = \frac{3.2}{x^2 - 1}$.

(a) Evaluate $f(3)$.

2. (a) _____

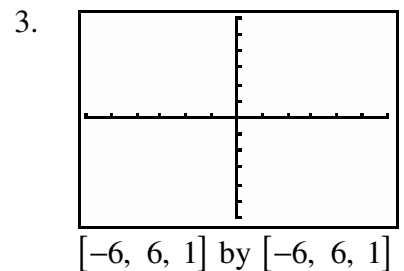
(b) Write the domain of f in set-builder notation.

(b) _____

3. Graph $f(x) = \frac{3.2}{x^2 - 1}$ in the viewing window

$[-6, 6, 1]$ by $[-6, 6, 1]$.

Show any vertical asymptotes.



In #4 and #5, simplify the expression.

4. $\frac{4x-1}{1-4x}$

4. _____

5. $\frac{2x^2 - 7x - 4}{x^2 - x - 12}$

5. _____

In #6 through #10, simplify.

6. $\frac{x^2 + 4}{x^2 - 4} \cdot \frac{x + 2}{x - 2}$

6. _____

7. $\frac{1}{8x^2} \div \frac{1}{2x^3}$

7. _____

8. $\frac{3}{x-4} + \frac{x}{x+4}$

8. _____

$$9. \frac{2}{x-1} - \frac{4}{(x-1)^2}$$

9. _____

$$10. \frac{\frac{2}{x} - \frac{1}{x-2}}{\frac{1}{x} + \frac{3}{x-2}}$$

10. _____

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

$$11. 4 = \frac{2}{3x-2}$$

11. _____

$$12. \frac{x}{3x+2} = \frac{x-2}{2x-1}$$

12. _____

$$13. \frac{4}{x-3} + \frac{5}{x+3} = \frac{2}{x^2-9}$$

13. _____

14. A triangle has sides with lengths 4, 9, and 11. Find the longest side of a similar triangle with a shortest side of length 10.

14. _____

15. Suppose y varies directly as x . If $y=7$ when $x=10$, find y when $x=8$.

15. _____

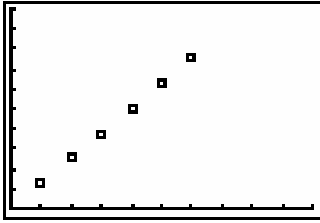
16. Use the table to determine whether the data represent direct or inverse variation. Find an equation that models the data.

16. _____

x	3	4	8	10
y	4	3	1.5	1.2

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

17. _____



[0, 10, 1] by [0, 20, 2]

In #18 and #19, divide.

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

18. _____

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

19. _____

20. One contractor can carpet a large room in 10 hours, and a second can carpet it in 12 hours.

- (a) Write an equation whose solution gives the time needed for the contractors, working together, to carpet the room.
- (b) Solve the equation in part (a).

20. (a) _____

(b) _____