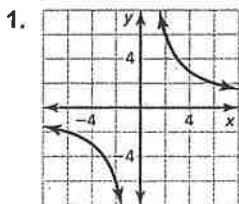
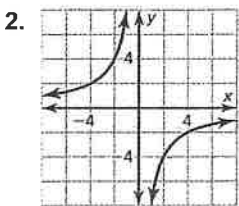


Answers

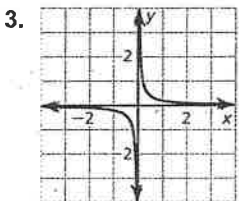
7.2 Extra Practice



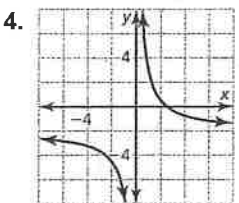
The graph of g lies farther from the axes than the graph of f . Both graphs lie in the first and third quadrants and have the same asymptotes, domain, and range.



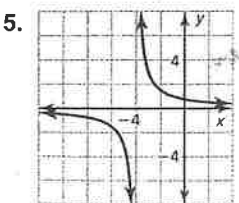
The graph of h is a reflection in the x -axis of the graph of f , and lies farther from the axes than the graph of f . The graphs have the same asymptotes, domain, and range.



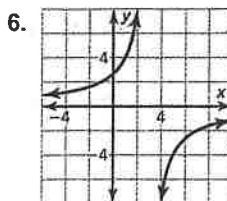
The graph of g lies closer to the axes than the graph of f . Both graphs lie in the first and third quadrants and have the same asymptotes, domain, and range.



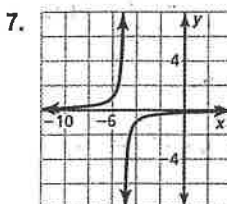
domain: all real numbers except 0, range: all real numbers except -2



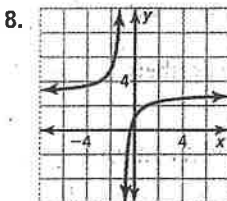
domain: all real numbers except -4 , range: all real numbers except 0



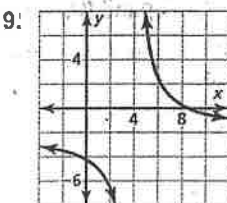
domain: all real numbers except 3, range: all real numbers except 0



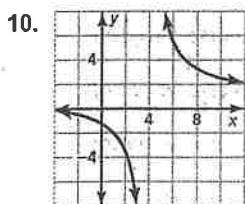
domain: all real numbers except -5 , range: all real numbers except 0



domain: all real numbers except -1 , range: all real numbers except 3



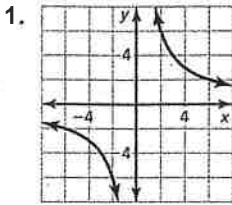
domain: all real numbers except 4, range: all real numbers except -2



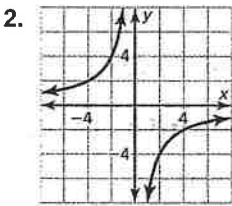
domain: all real numbers except 4, range: all real numbers except 1

Answers

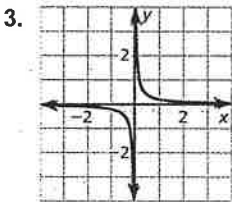
7.2: Extra Practice



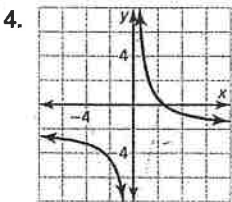
The graph of g lies farther from the axes than the graph of f . Both graphs lie in the first and third quadrants and have the same asymptotes, domain, and range.



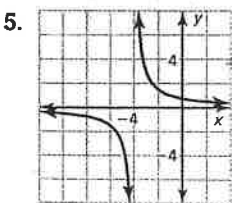
The graph of h is a reflection in the x -axis of the graph of f , and lies farther from the axes than the graph of f . The graphs have the same asymptotes, domain, and range.



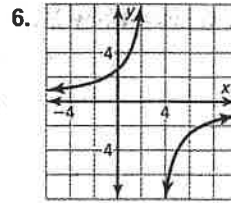
The graph of g lies closer to the axes than the graph of f . Both graphs lie in the first and third quadrants and have the same asymptotes, domain, and range.



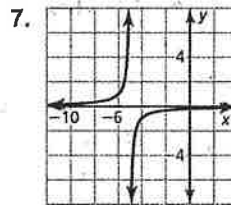
domain: all real numbers except 0, range: all real numbers except -2



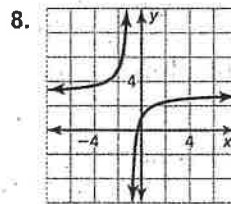
domain: all real numbers except -4 , range: all real numbers except 0



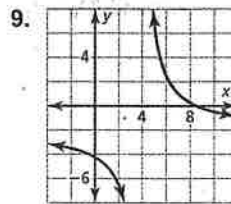
domain: all real numbers except 3, range: all real numbers except 0



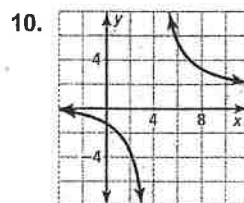
domain: all real numbers except -5 , range: all real numbers except 0



domain: all real numbers except -1 , range: all real numbers except 3



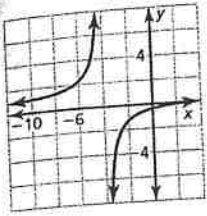
domain: all real numbers except 4, range: all real numbers except -2



domain: all real numbers except 4, range: all real numbers except 1

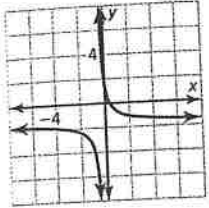
Answers

11.



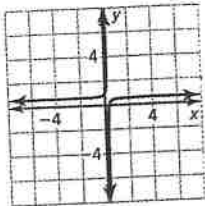
domain: all real numbers except -4 , range: all real numbers except $\frac{1}{2}$

12.



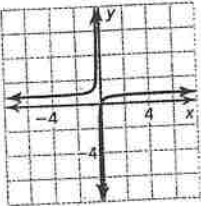
domain: all real numbers except $-\frac{2}{5}$, range: all real numbers except $-\frac{8}{5}$

13.



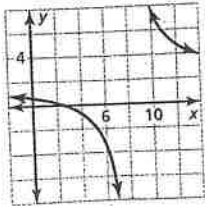
domain: all real numbers except $\frac{1}{5}$, range: all real numbers except $\frac{3}{5}$

14.



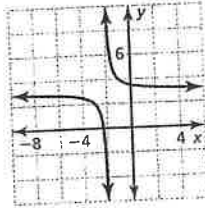
domain: all real numbers except $-\frac{1}{4}$, range: all real numbers except $\frac{3}{4}$

15.



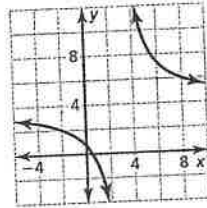
domain: all real numbers except 8 , range: all real numbers except 2

$$16. g(x) = \frac{1}{x+2} + 3$$



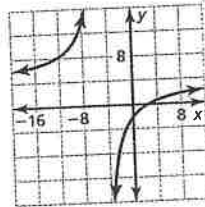
translation 2 units left and 3 units up

$$17. g(x) = \frac{10}{x-3} + 4$$



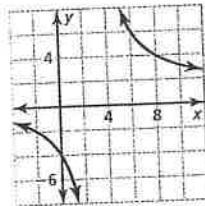
translation 3 units right and 4 units up

$$18. g(x) = \frac{-30}{x+5} + 4$$



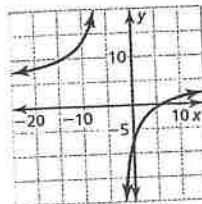
translation 5 units left and 4 units up

$$19. g(x) = \frac{15}{x-3} + 1$$



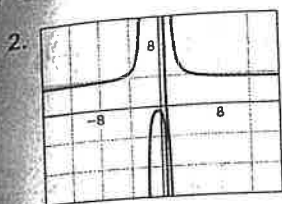
translation 3 units right and 1 unit up

$$20. g(x) = \frac{-50}{x+4} + 5$$

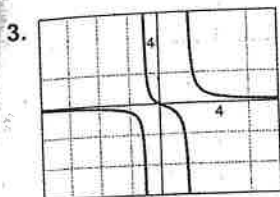


translation 4 units left and 5 units up

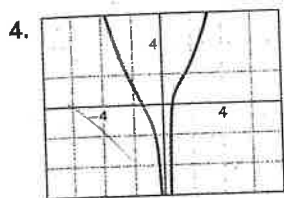
Answers



As $x \rightarrow +\infty$, $y \rightarrow \frac{7}{2}$. As $x \rightarrow -\infty$, $y \rightarrow \frac{7}{2}$.



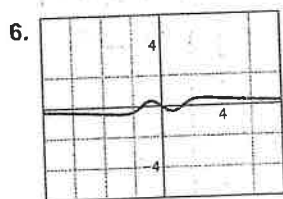
As $x \rightarrow +\infty$, $y \rightarrow 0$. As $x \rightarrow -\infty$, $y \rightarrow 0$.



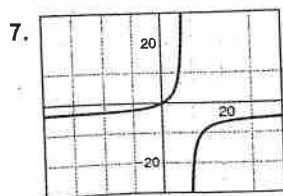
As $x \rightarrow +\infty$, $y \rightarrow +\infty$. As $x \rightarrow -\infty$, $y \rightarrow +\infty$.



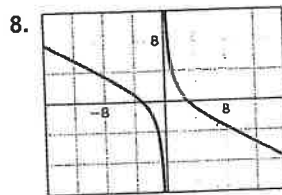
As $x \rightarrow +\infty$, $y \rightarrow -\infty$. As $x \rightarrow -\infty$, $y \rightarrow +\infty$.



As $x \rightarrow +\infty$, $y \rightarrow 0$. As $x \rightarrow -\infty$, $y \rightarrow 0$.



As $x \rightarrow +\infty$, $y \rightarrow -4$. As $x \rightarrow -\infty$, $y \rightarrow -4$.



As $x \rightarrow +\infty$, $y \rightarrow -\infty$. As $x \rightarrow -\infty$, $y \rightarrow +\infty$.

7.2 Puzzle Time

A COIN

7.3 Cumulative Practice

1. $46 + 42i$ 2. $11 + 41i$

7.3 Prerequisite Skills Practice

1. $\frac{36}{25}$ 2. $\frac{6}{11}$

7.3-Extra Practice

1. $\frac{4x^2}{3x^2 + 7}, x \neq 0$ 2. $\frac{x+2}{x-1}, x \neq -3$

3. cannot be simplified

4. $\frac{x-5}{x^2 - 4x + 16}, x \neq -4$

5. $\frac{x^2 - 4}{5x - 3}$ 6. $\frac{x-1}{12x^2 - 10}$

7. $\frac{(x-4)(x-2)}{x}, x \neq -3$

8. $(x+6)(x+2), x \neq 0, x \neq 4$

9. $\frac{(x-2)(x+1)}{3}, x \neq 0, x \neq -5$

10. $\frac{3x(x+2)}{(x+1)(x+4)}, x \neq 3$

11. $\frac{(x+7)(x-4)(x-3)}{x+5}, x \neq 5$

12. $(x+5)(x-4), x \neq 3, x \neq -3$

13. $1, x \neq 0, x \neq -5, x \neq 4$

14. $\frac{x-3}{(x+2)(x-7)}$

Answers

15. $\frac{(x-3)(x+2)}{(x-2)(x+3)}$, $x \neq -1, x \neq -4, x \neq -2$

16. $1, x \neq 3, x \neq -3, x \neq -4, x \neq 2$

17. $x + 3$

18. $\frac{4}{x+3}$

7.3 Reteach

1. $\frac{3x}{5x+2}$, $x \neq 0$

2. $\frac{6x-1}{2x}$

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

4. cannot be simplified

5. $\frac{x+1}{x^2+2x+4}$, $x \neq 2$

6. $\frac{x-4}{x^2-x+1}$, $x \neq -1$

7. $\frac{6x^2}{y^3}$, $x \neq 0$

8. $\frac{(x+2)(x-3)}{x}$, $x \neq 1$

9. $(x-5)(x+1)$, $x \neq 0, x \neq -3$

10. $\frac{(x+3)(x-3)}{4}$, $x \neq 0, x \neq 2$

11. $\frac{56x^9}{y^{15}}$, $x \neq 0$

12. $2, x \neq 0, x \neq -2, x \neq 3$

13. $5, x \neq 0, x \neq 1, x \neq -3$

14. $\frac{x+7}{(x+3)(x-2)}$

7.3 Enrichment and Extension

1. $f(x) = \frac{x^2 + x - 6}{x^2 - 2x - 35}$; $y = 1$

2. $h(x) = \frac{x^3 + 2x^2 - 16x - 32}{x^2 + 6x + 9}$; There is no horizontal asymptote.

3. $k(x) = \frac{-4x^3 + 5x^2 + 2}{7x^3 + 2x^2 + 5x - 9}$; $y = -\frac{4}{7}$

4. $m(x) = \frac{2x - 3}{3x^2 + 5x - 2}$; $y = 0$

5. $t(x) = \frac{3x^2 - 22x + 7}{10x^2 + 7x - 12}$; $y = \frac{3}{10}$

7.3 Puzzle Time

A NEWSPAPER

7.4 Cumulative Practice

1. $(fg)(x) = 3x^{5/3}$

2. $\left(\frac{f}{g}\right)(x) = 6x^{1/3}$

7.4 Prerequisite Skills Practice

1. $\frac{5}{8}$

2. $\frac{33}{100}$

7.4 Extra Practice

1. $\frac{x-5}{25x^2}$

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

3. 3

4. $36x^2(x-2)$

5. $x^2 - 100$

6. $(25x^2 - 4)(3x^2 - 10x - 8)$

7. $x^2 + 7x - 18$

8. $\frac{4x^2 - 13x + 7}{(x-5)(x+1)}$

9. $\frac{3x+16}{(x-8)(x+3)}$

10. $\frac{3x+37}{(x+2)(x-8)}$

11. $\frac{8x^3 - 15x^2 - 17x - 9}{x(x-3)(2x+1)}$

12. By not using the least common denominator, the resulting rational expression is not in simplest form. The numerator and denominator still share a common factor of x .

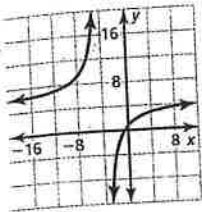
$$\frac{4}{7x} + \frac{5}{x^3} = \frac{4(x^2)}{7x(x^2)} + \frac{5(7)}{x^3(7)} = \frac{4x^2 + 35}{7x^3}$$

13. always; If one denominator divides the other, then any multiple of the larger one is also a multiple of the smaller one.

14. sometimes; This happens if one denominator divides the other.

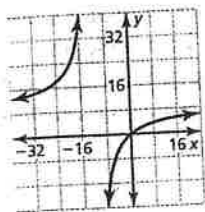
Answers

15. $g(x) = \frac{-17}{x+4} + 5$



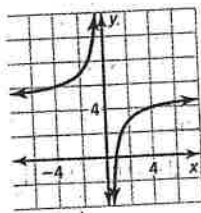
translation 4 units left and 5 units up

16. $g(x) = \frac{-108}{x+12} + 9$



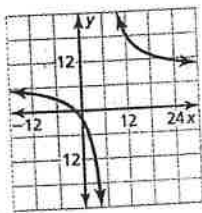
translation 12 units left and 9 units up

17. $g(x) = \frac{-4}{x} + 5$



translation 5 units up

18. $g(x) = \frac{61}{x-6} + 8$



translation 6 units right and 8 units up

7.4 Reteach

1. $\frac{3}{x}$

2. $\frac{7-3x}{x-2}$

3. $\frac{-5x^2 - 14x - 18}{(x+4)(x-3)}$

4. $\frac{6x+2}{(x+9)(x-2)}$

7.4 Enrichment and Extension

1. $\frac{5}{x+1} - \frac{2}{x+4}$

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

3. $\frac{8}{x-3} + \frac{10}{x+3}$

4. $\frac{26}{x-7} - \frac{4}{x+4}$

5. $\frac{4}{x} + \frac{35}{x-3} - \frac{7}{x+3}$

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

7.4 Puzzle Time

GLASS CLIPPERS

7.5 Cumulative Practice

1. $f(g(x)) = -75x^2 + 60x - 16$; all real numbers

2. $f(g(x)) = \frac{8}{4x+8}$; all real numbers except $x = -2$

7.5 Prerequisite Skills Practice

1. $x = 2, x = 5$

2. $x = -\frac{2}{3}, x = 2$

7.5 Extra Practice

1. $x = -8$

2. $x = 2, 7$

3. $x = 0, -\frac{1}{3}$

4. $x = 8$

5. $5(x+3)(x+2)$

6. $4(x-8)(3x-2)$

7. $x = 8$

8. $x = 1$

9. $x = \frac{9}{2}$

10. $x = \frac{8}{3}$

11. $x = 2, -1$

12. $x = 2, -4$

13. incorrectly multiplied by $(x+2)$, which is not the common denominator $x(x+2)$

$$\frac{3}{x+2} + 5 = \frac{1}{x}$$

$$x(x+2) \cdot \frac{3}{x+2} + x(x+2) \cdot 5 = x(x+2) \cdot \frac{1}{x}$$

14. $\frac{1.4}{3} + \frac{1.4}{t} = 1$; $t = 2.625$ h