

11 Chapter 11 Test, Form 3

SCORE _____

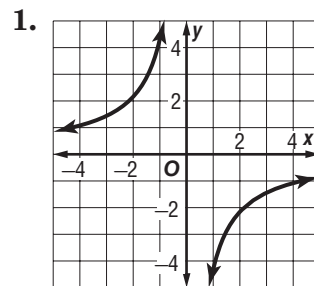
1. Graph an inverse variation in which y varies inversely as x and $y = 3.6$ when $x = -1.2$.

2. Write an inverse variation equation that relates x and y if y varies inversely as x and $y = 6$ when $x = \frac{2}{5}$. Find y when $x = 4$.

3. Identify the asymptotes of $y = \frac{5}{2x - 1}$.

4. State the excluded values of $\frac{x^4 - 10x^2 + 9}{x^3 + 4x^2 + 3x}$.

5. Simplify $\frac{6x^2 - 7x - 3}{6x^2 - x - 1}$. State the excluded values of x .



1. $xy = \frac{12}{5}; \frac{3}{5}$

2. $x = 0.5, y = 0$

3. $-3, -1, 0$

4. $\frac{2x - 3}{2x - 1}, -\frac{1}{3}, \frac{1}{2}$

Find each product.

6. $\frac{a^2 - 5a - 14}{48a^2} \cdot \frac{60a^3}{a^2 - 4a - 21}$

7. $\frac{2b^2 - b - 15}{6b^2 + 7b - 3} \cdot \frac{3b^2 + 5b - 2}{b^2 - b - 6}$

5. $\frac{5a(a + 2)}{4(a + 3)}$

6. $\frac{2b + 5}{2b + 3}$

Find each quotient.

8. $\frac{n^2 - 5n + 6}{w^2 + 9w + 14} \div \frac{(2 - n)(3 - n)}{w + 7}$

9. $\frac{3x^5y^3}{x^2 - 9} \div \frac{12x^2y^5}{x + 3}$

10. $(3x^3 - 2x^2 - 48x + 32) \div (3x - 2)$

7. $\frac{1}{w + 2}$

8. $\frac{x^3}{4y^2(x - 3)}$

9. $(x + 4)(x - 4)$

Find each sum.

11. $\frac{3 - 2w}{5w^2 - 1} + \frac{4w + 1}{5w^2 - 1}$

12. $\frac{2}{(2x + 7)^2} + \frac{1}{4x^2 - 49}$

10. $\frac{2w + 4}{5w^2 - 1}$

11. $\frac{6x - 7}{(2x + 7)^2(2x - 7)}$

Assessment

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Find each difference.

13. $\frac{12x + 1}{4x - 1} - \frac{7x + 3}{4x - 1}$

14. $\frac{5y}{y^2 - 36} - \frac{2y + 5}{y + 6}$

15. Find $\frac{2w + 7}{w + 5} - \frac{3w}{5 + w} + \frac{8w + 5}{w + 5}$.

16. Find $\frac{2}{y - 7} - \frac{3y}{y - 7} + \frac{-5y}{7 - y}$.

17. Write $(p + 2) + \frac{p + 1}{p - 4}$ as a rational expression.

18. Simplify $\frac{\frac{x + 5}{x^2 + 2x - 8}}{\frac{x^2 + 2x - 15}{x^2 - 5x + 6}}$.

19. What is the quotient of $\frac{4u^2}{9r^3}$ and $\frac{6u^4}{5r}$?

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

14. $\frac{-2y^2 + 12y + 30}{y^2 - 36}$

15. $\frac{7w + 12}{w + 5}$

16. $\frac{2y + 2}{y - 7}$

17. $\frac{p^2 - p - 7}{p - 4}$

18. $\frac{1}{x + 4}$

19. $\frac{10}{27r^2u^2}$

Solve each equation. State any extraneous solutions.

20. $\frac{p^2}{p - 3} + \frac{5}{3 - p} = 2$

21. $\frac{x - 1}{x - 2} - \frac{7}{x + 3} = \frac{5}{x^2 + x - 6}$

22. **CLEANING** James can clean a car interior in 20 minutes, and Sally can clean the same car in 15 minutes. If they work together, how long will it take to clean 15 cars?

23. **POOL** Bill's pool has a hole and is losing water at a rate of $\frac{4}{9}$ gallon per minute. How many hours will it take for Bill to lose 100 gallons?

24. Simplify $\left[\left(\frac{20 \text{ miles}}{1 \text{ hour}} \cdot \frac{5280 \text{ feet}}{1 \text{ mile}} \right) \div \frac{60 \text{ minutes}}{1 \text{ hour}} \right] \div \frac{60 \text{ seconds}}{1 \text{ minute}}$.

25. **GEOMETRY** The volume of a box is $2x^3 + 11x^2 + 18x + 9$. One dimension of the box is $x + 1$. What are the other two dimensions if they are polynomials in x with integer coefficients?

Bonus Find the constants k and c so that

$$\frac{7x + 17}{x^2 + 4x + 3} = \frac{k}{x + 3} + \frac{c}{x + 1}$$

20. _____

21. 3; extraneous 2

22. $2\frac{1}{7}$ hr

23. $3\frac{3}{4}$ hr

24. $29\frac{1}{3}$ ft/s

25. $2x + 3, x + 3$

B: $c = 5; k = 2$