

Chapter Test C

For use after Chapter 9

The variables x and y vary inversely. Use the given values to write an equation relating x and y . Then find y when $x = 3$.

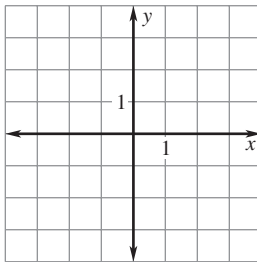
1. $x = -1, y = 9$ 2. $x = \frac{3}{5}, y = \frac{5}{3}$ 3. $x = -6, y = \frac{1}{3}$

The variable z varies jointly with x and y . Use the given values to write an equation relating $x, y,$ and z . Then find z when $x = 2$ and $y = 3$.

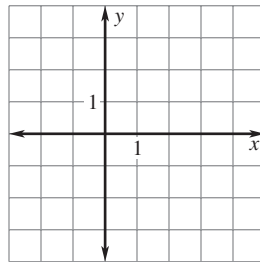
4. $x = 4, y = 2, z = -1$ 5. $x = \frac{1}{2}, y = \frac{1}{3}, z = \frac{3}{2}$

Graph the function.

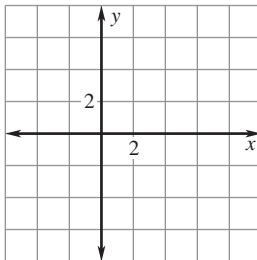
6. $xy = 2$



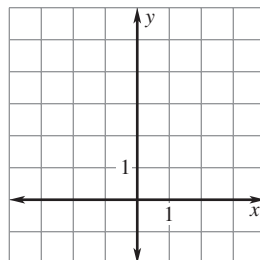
7. $y = \frac{2}{x-2}$



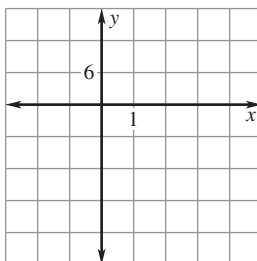
8. $y = \frac{2x}{x-4}$



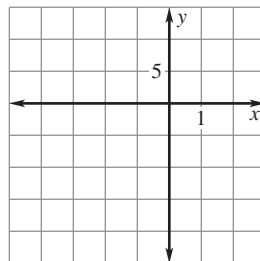
9. $y = \frac{4}{x^2}$



10. $y = \frac{-2x^2}{x-2}$



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



Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. Use grid at left. _____
7. Use grid at left. _____
8. Use grid at left. _____
9. Use grid at left. _____
10. Use grid at left. _____
11. Use grid at left. _____

Chapter Test C

For use after Chapter 9

Perform the indicated operation. Simplify the result.

12. $\frac{5}{x} + \frac{3}{y} - \frac{2}{z}$

13. $\frac{3x-5}{x^2-9} + \frac{7-x}{9-x^2} - \frac{1}{x+3}$

14. $\frac{3y-5}{2y-6} - \frac{4y-2}{5y-15}$

15. $(30x^3 - 6x^2) \div \frac{15x^2 - 3x}{4x^2 + 4x - 24}$

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

17. $\frac{6x^2+x-2}{6x^2+7x+2} \cdot \frac{2x^2+9x+4}{4-7x-2x^2}$

Simplify the complex fraction.

18. $\frac{\frac{1}{5x^2} - \frac{2}{y}}{\frac{7}{10x} + \frac{3}{2y^2}}$

19. $\frac{\left(\frac{10}{x+1}\right)}{\left(\frac{1}{2} + \frac{3}{x+1}\right)}$

20. $2 - \frac{2}{2 - \left(\frac{2}{2-x}\right)}$

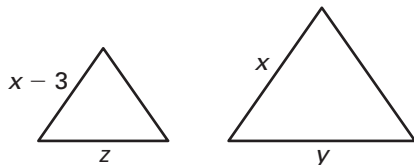
Solve the equation using any method. Check each solution.

21. $\frac{2}{x} = \frac{x}{x^2-8}$

22. $\frac{3}{x-2} = \frac{4}{x-3} - \frac{6}{x^2-5x+6}$

23. $\frac{3}{x+1} + \frac{x-2}{3} = \frac{13}{3x+3}$

24. **Geometry Connection** The similar triangles below have congruent angles and proportional sides. Express z in terms of x and y .



25. **Fund Raiser** As a fund raiser, your junior class will make and sell holiday greeting cards. You spend \$750 as an initial startup cost. It will cost you \$4.25 per box to print, and you will sell the cards at \$10 per box. How many boxes must you sell to show a profit?

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

25. _____