

Chapter Test A

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 $x = 2$.

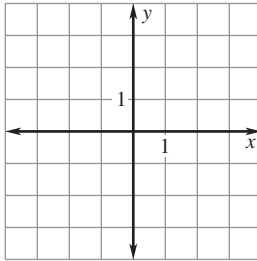
1. $x = 1, y = 2$ 2. $x = 4, y = -1$ 3. $x = 6, y = 2$

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 $y = 4$.

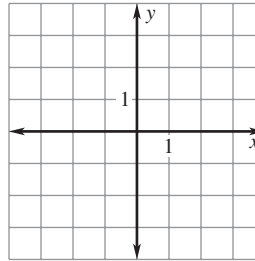
4. $x = 2, y = 4, z = 1$ 5. $x = -2, y = 1, z = 2$

Graph the function.

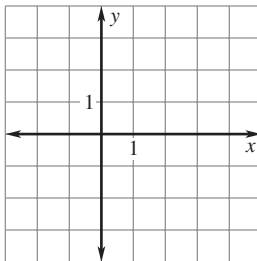
6. $y = \frac{1}{x}$



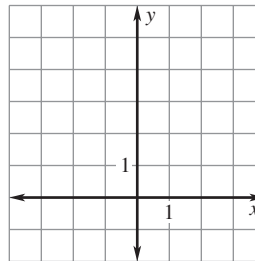
7. $y = \frac{2}{x-1}$



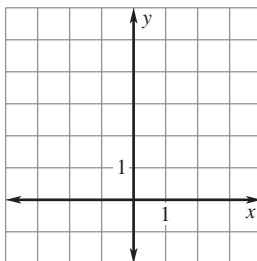
8. $y = \frac{x}{x-2}$



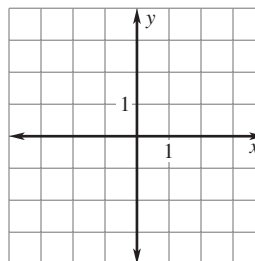
9. $y = \frac{1}{x^2}$



10. $y = x^2$



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

**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. _____

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Perform the indicated operation. Simplify the result.

12. $\frac{x^3}{4} \cdot \frac{2}{x^2}$

13. $\frac{x+1}{x} \cdot \frac{x^3}{(x+1)^2}$

14. $\frac{x+5}{x} \div \frac{x+5}{2x}$

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

16. $\frac{5x^2-8x}{x^2-9} - \frac{4x+9x^2}{x^2-9}$

17. $\frac{9x^3}{8x+32} \cdot \frac{2x+8}{-3x^4}$

Simplify the complex fraction.

18. $\frac{5 + \frac{1}{4}}{2 + \frac{2}{3}}$

19. $\frac{\frac{x}{3} - 4}{5 + \frac{1}{x}}$

20. $\frac{\frac{x+3}{3x^2}}{\frac{6x^2}{(x+3)^2}}$

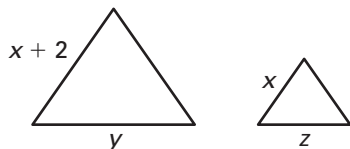
Solve the equation using any method. Check each solution.

21. $\frac{3x}{4} = \frac{(x+1)}{2}$

22. $\frac{10}{x+3} + \frac{10}{3} = 6$

23. $\frac{2x-9}{x-7} + \frac{x}{2} = \frac{5}{x-7}$

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



25. **Starting a Business** You start a business manufacturing golf balls, spending \$42,000 for supplies and equipment. You figure it will cost \$12 per dozen to manufacture the golf balls. How many dozens of golf balls must you produce before your average total cost per dozen is \$15?

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

25. _____