

Chapters 1–13 Final Mastery Test

Directions Circle the letter of the correct answer.

- Find the difference of $-17 - (-52)$.
A -69
B -35
C 35
D 9
- Find the quotient of $\frac{(-40)}{(-8)}$.
A -48
B 5
C 32
D -5
- Factor the expression $16x^2 - 12x - 10$.
A $(4x - 5)(4x + 2)$
B $(2x - 5)(8x + 2)$
C $(4x + 5)(4x + 2)$
D $(3x - 5)(4x + 2)$
- Find the sum of $5\sqrt{16} + 3\sqrt{4}$.
A 26
B $8\sqrt{4}$
C 44
D 68
- Simplify $\frac{35x^2y^4}{7xy^3}$.
A $\frac{5x^2y^4}{xy^3}$
B $7x^2y^4$
C $5x^2y^{\frac{4}{3}}$
D $5xy$
- Simplify $\frac{\frac{6}{5w}}{\frac{2}{5w}}$.
A $3w$
B $60w$
C 3
D 6
- Solve for x . $x + 3 = -31$
A -34
B $-10\frac{1}{3}$
C -28
D 3
- Solve for x . $\frac{7x}{8} = \frac{1}{2}$
A 4
B $\frac{4}{7}$
C 0
D $3\frac{1}{2}$
- Solve for x . $\sqrt{3x} = 9$
A 3
B 54
C 6
D 27

Chapters 1–13 Final Mastery Test, continued

10. What is the reciprocal of $\frac{\frac{3x}{y}}{\frac{y}{x}}$?
- A** $\frac{1}{3}$ **C** $\frac{3x^2}{y^2}$
B $\frac{y^2}{3x^2}$ **D** 3
11. Almonds cost \$3.00 per pound and walnuts cost \$6.00 per pound. If you mix 3 pounds of almonds with 3 pounds of walnuts, how much does the mixture cost per pound?
- A** \$3.75 **C** \$4.50
B \$9.00 **D** \$10.00
12. Ashley drives for $6\frac{3}{4}$ hours at an average rate of 48 miles per hour. How many miles does she drive?
- A** 288 miles **C** 436 miles
B 324 miles **D** 224 miles
13. What is $(x^3 - 121x) \div (x + 11)$?
- A** $(x^2 - 11x)$ **C** $x(x - 121)$
B $x(x^2 + 11x)$ **D** $(x^2 + 11x)$
14. Find the root(s) of the quadratic equation $x^2 - 11x + 18 = 0$ by factoring.
- A** -11, 18 **C** -6, 12
B -9, -2 **D** 2, 9
15. Find the root(s) of the quadratic equation $x^2 + 4x - 7 = 0$ by completing the square.
- A** $-2 + \sqrt{11}$ **C** $-2 + \sqrt{11}, -2 - \sqrt{11}$
B $-2\sqrt{11}$ **D** 9, -9
16. Find the roots of the quadratic equation $x^2 - 4x - 6 = 0$ by using the quadratic equation $x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$. Express the answer in simplest form.
- A** 8, 12 **C** -8, 12
B $2 + \sqrt{10}, 2 - \sqrt{10}$ **D** $1 + \sqrt{12}, 1 - \sqrt{12}$

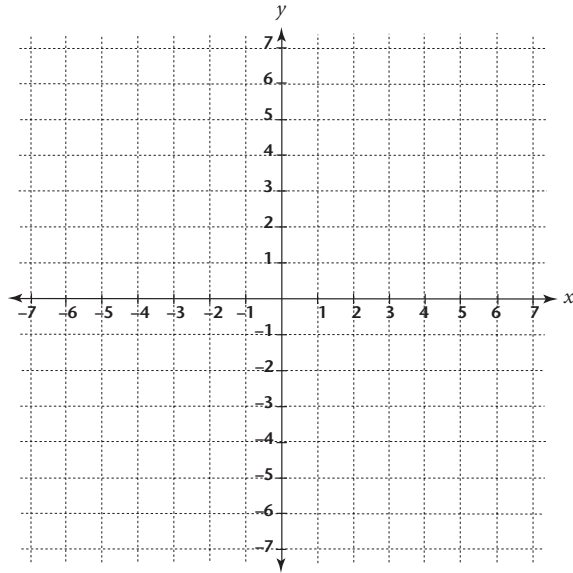
Chapters 1–13 Final Mastery Test, continued

Directions Use the coordinate system to plot and label the following points.

17. Point $H(-5, 0)$

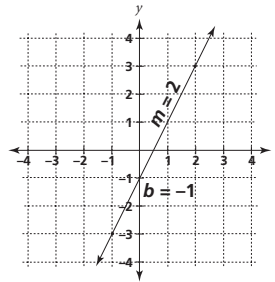
18. Point $T(0, -2)$

19. Point $P(-4, 4)$

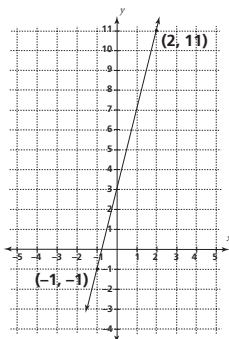


Directions Solve.

20. Write the equation of the line given $m = 2$ and $b = -1$.

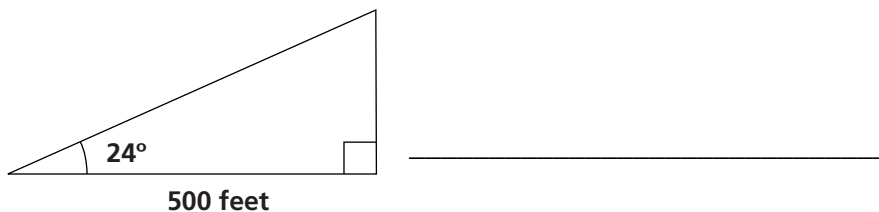


21. Write the equation of the line.

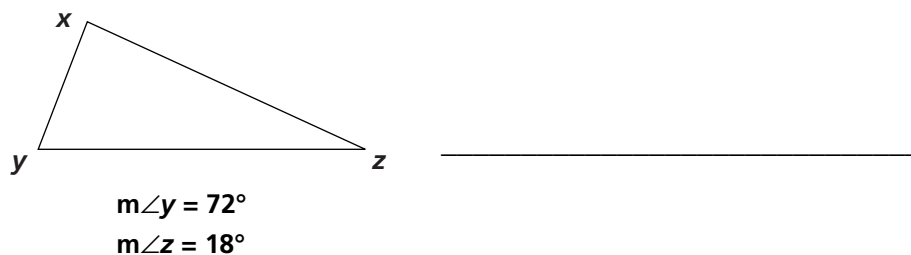


Chapters 1–13 Final Mastery Test, continued**Directions** Solve.

22. Suppose you are standing 500 feet away from a tree and you see a hawk hovering directly above that tree. The angle of elevation from you to the hawk is 24° . To the nearest foot, at what height is the hawk hovering?



23. Find $m\angle x$.

**Directions** Solve.

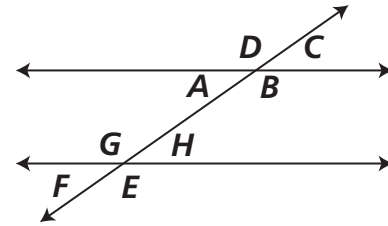
24. Anita won the class election by a margin of 5 to 3. She received 355 votes. How many votes did the other candidates get?
- _____
25. Five friends are waiting in a line. How many different ways can they arrange themselves in that line?
- _____
26. Suppose a bag contains 6 marbles. One is white, two are red, and three are yellow. Each time a marble is taken out, it is replaced. Find P (red and yellow).
- _____
27. A rectangle has a length 4 cm greater than its width. Its area is 45 cm^2 . What are the length and width of the rectangle?
- _____

Chapters 1–13 Final Mastery Test, continued

Directions For problems 28–29, $\angle A = 42^\circ$.

28. $\angle B$ is supplementary to $\angle A$. Determine $m\angle B$.

29. $\angle A$ and $\angle H$ are alternate interior angles. Determine $m\angle H$.



Directions Complete the table of values for each equation.

30. $y = x - 1$

$y = 3x - 7$

$y = x - 1$	
x	y
-2	
-1	
0	
1	
2	

$y = 3x - 7$	
x	y
-2	
-1	
0	
1	
2	

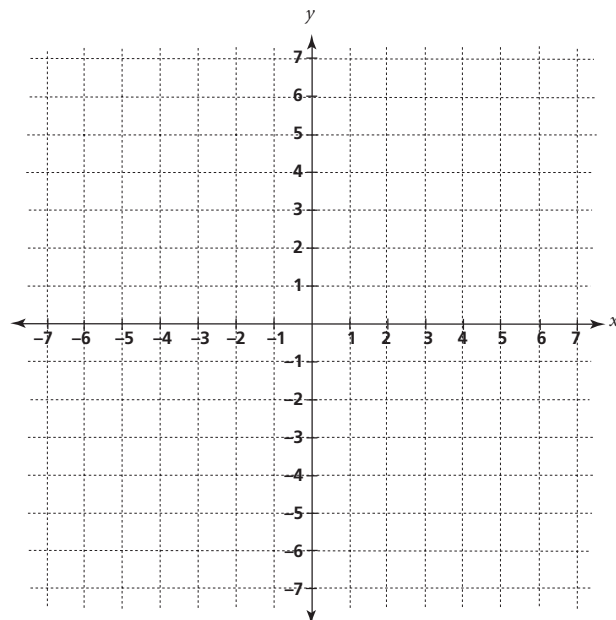
31. $-2y = x$

$2y = -2x$

$-2y = x$	
x	y
-2	
-1	
0	
1	
2	

$2y = -2x$	
x	y
-2	
-1	
0	
1	
2	

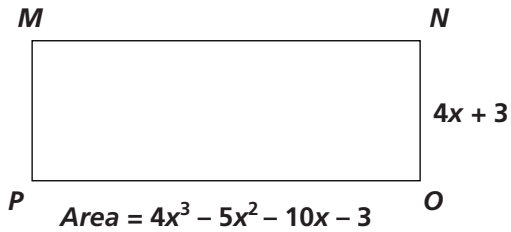
32. Graph each system of equations from problems 30 and 31. Name the point of intersection for each system.



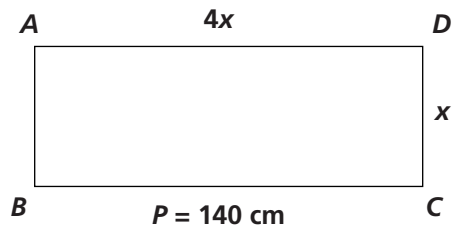
Chapters 1–13 Final Mastery Test, continued

Directions Solve.

33. Find the length of the rectangle in terms of x .



34. Find the length and width of rectangle $ABCD$.



35. Find the length and width of rectangle $WXYZ$.

