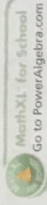


Chapter Test



Do you know HOW?

Evaluate each expression for $x = 5$.

- $\frac{5}{3}(x - 6) - (6 - 4x)$
- $3(x^2 - 4) + 7(x - 2)$
- $x^2 - 2x + 3x - 4x + 5x$

Simplify each expression.

- $a^2 + a + a^2$
- $2x + 3y - 5x + 2y$
- $5(a - 2b) - 3(a - 2b)$
- $3[2(x - 3) + 2] + 5(x - 3)$

Solve each equation.

- $4y - 6 = 2y + 8$
- $3(2x + 1) = 35$
- $5(3w - 2) - 7 = 23$
- $t - 2(3 - 2t) = 2t + 9$
- $5(s - 12) - 24 = 3(s + 2)$

13. The lateral surface area of a cylinder is given by the formula $S = 2\pi rh$. Solve the equation for r .

14. **Savings** Briana and her sister Molly both want to buy the same model bicycle. Briana needs \$73 more before she can afford the bike. Molly needs \$65 more. If they combine their money, they will have just enough to buy one bicycle that they could share. What is the cost of the bicycle?

15. **Musical** There is only one freshman in the cast of a high school musical. There are 6 sophomores and 11 juniors. One third of the cast are seniors. How many seniors are in the musical?

Determine whether each equation is *always*, *sometimes*, or *never* true.

- $2x + 7 - x = 3 + x + 4$
- $5a - 1 - 3a = 2a + 1$
- $3x + 17 \geq 5$
- $25 - 2x < 11$
- $\frac{3}{8}x < -6$ or $5x > 2$
- $2 < 10 - 4d < 6$
- $4 - x = |2 - 3x|$
- $5|3w + 2| - 3 > 7$

Solve each equation or inequality. Graph the solution.

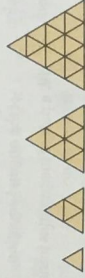
Do you UNDERSTAND?

24. **Writing** Describe the relationships among these sets of numbers: natural numbers, whole numbers, integers, rational numbers, irrational numbers, and real numbers.

25. **Reasoning** Justify each step by identifying the property used.

$$\begin{aligned} t + 5(t + 1) &= t + (5t + 5) \\ &= (t + 5t) + 5 \\ &= (1t + 5t) + 5 \\ &= 6t + 5 \end{aligned}$$

26. **Reasoning** The first four figures of a pattern are shown.



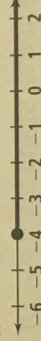
Describe the tenth figure in the pattern.

Chapter Test

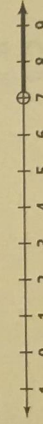
- 29
- 84
- 15
- $2a^2 + a$
- $-3x + 5y$
- $2a - 4b$
- $11x - 27$
- 7
- $\frac{16}{3}$
- $\frac{8}{3}$
- 5
- 45
- $r = \frac{5}{2\pi h}$
- \$138
- 9 seniors
- always

17. never

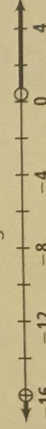
18. $x \geq -4$



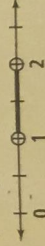
19. $x > 7$



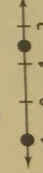
20. $x < -16$ or $x > \frac{2}{5}$



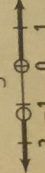
21. $1 < d < 2$



22. $-1, \frac{3}{2}$



23. $w < -\frac{4}{3}$ or $w > 0$



24. Answers may vary. Sample: The natural numbers are the counting numbers (1, 2, 3, ...); the whole numbers are the natural numbers and zero (0, 1, 2, 3, ...); the integers are the whole numbers and their opposites (... -3, -2, -1, 0, 1, 2, 3, ...); the rational numbers are all numbers you can write as a quotient of integers $\frac{a}{b}$, $b \neq 0$; the irrational numbers are decimal representations that neither terminate nor repeat; and the real numbers include all rational numbers and irrational numbers.

25. Distr. Prop.; Assoc. Prop. of Add.; Ident. Prop. of Mult.; Distr. Prop.; add.

26. A triangle formed from 100 smaller triangles arranged in 10 rows.

