CHAPTER 1

Chapter Standardized Test

TEST-TAKING STRATEGY Draw an arrow on your test booklet next to questions that you do not answer. This will enable you to find the questions quickly when you go back.

1. MULTIPLE CHOICE Which list of numbers is written in increasing order?

(A) $-\sqrt{7}, -3, -\frac{5}{2}, 0, \frac{3}{4}$

(B) $-6, -4.5, -4.8, 1, 1.9$

(C) $-\sqrt{3}, -\frac{8}{5}, -\frac{1}{2}, 0, \frac{1}{8}$

(D) $-\frac{11}{2}, -\sqrt{2}, -\frac{1}{7}, -\frac{1}{4}, \frac{5}{2}$

(E) $-0.5, -\sqrt{2}, -\frac{7}{2}, -\sqrt{13}, -13$

2. MULTIPLE CHOICE Which property is illustrated by the statement $6(8 + 4) = 6(4 + 8)$?

(A) Distributive property

(B) Associative property of addition

(C) Associative property of multiplication

(D) Commutative property of addition

(E) Commutative property of multiplication

3. MULTIPLE CHOICE Which expression *cannot* be simplified?

(A) $8x - 8$ (B) $8x - x$

(C) $8x + 5x$ (D) $(8 + 5)x$

(E) $-(x + x)$

4. MULTIPLE CHOICE Which number does $(7 + 1)^2 - 16 \div 2 + 6 \div 3$ equal?

(A) $\frac{62}{3}$ (B) $\frac{23}{3}$ (C) 10

(D) 2 (E) 58

5. MULTIPLE CHOICE Which number does $4x^2 - 5x + 3$ equal when $x = -3$?

(A) -48 (B) 24 (C) 54

(D) -54 (E) -18

6. MULTIPLE CHOICE Which number is the solution of the equation $-4x + 8 = x - 7$?

(A) -3 (B) -5 (C) 3

(D) 5 (E) $-\frac{1}{5}$

7. MULTIPLE CHOICE A real estate broker earns a salary of \$21,000 plus 2.5% of the value of any real estate sold. Last year the broker earned \$52,000. What was the total value of all real estate sold by the broker?

(A) \$12,400 (B) \$31,000

(C) \$124,000 (D) \$1,240,000

(E) \$12,400,000

8. MULTIPLE CHOICE Which gives the equation $C = 2\pi r$ solved for r?

(A) $r = 2\pi C$ (B) $r = \frac{C}{2\pi}$

(C) $r = \frac{2\pi}{C}$ (D) $r = \frac{2C}{\pi}$

(E) $r = 2\frac{\pi}{2C}$

9. MULTIPLE CHOICE Which inequality is the solution of $6x - 3 \geq 7 + 4x$?

(A) $x \geq -5$ (B) $x > 5$ (C) $x \leq 5$

(D) $x \leq -5$ (E) $x \geq 5$

10. MULTIPLE CHOICE Which number is *not* a solution of the inequality $-3 \leq -6x + 3 \leq 9$?

(A) -1 (B) 0 (C) 0.5

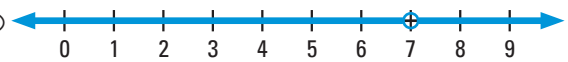
(D) 1 (E) 2

11. MULTIPLE CHOICE Which number is a solution of the equation $|5x - 2| = 8$?

(A) $\frac{6}{5}$ (B) $-\frac{6}{5}$ (C) $\frac{1}{2}$

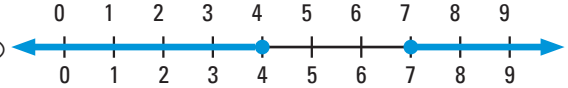
(D) -2 (E) -1

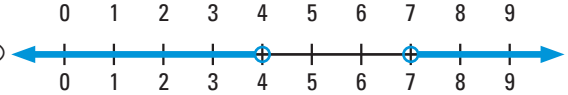
12. MULTIPLE CHOICE Which graph represents $|2x - 11| > 3$?

(A)


(B)


(C)


(D)


(E)


QUANTITATIVE COMPARISON **In Exercises 13–15, choose the statement that is true about the given quantities.**

(A) The quantity in column A is greater.

(B) The quantity in column B is greater.

(C) The two quantities are equal.

(D) The relationship cannot be determined from the given information.

	Column A	Column B
13.	$x^2 + (2x - 15) - 9x + 52 \div 2$ when $x = 1$	$x^2 + (2x - 15) - 9x + 52 \div 2$ when $x = -1$
14.	a if $6a + 7 = -5$	b if $b - 5 = 2b - 7$
15.	t if $I = Prt$, $I = \$100$, $P = \$1000$, and $r = 4\%$	t if $I = Prt$, $I = \$200$, $P = \$2000$, and $r = 4\%$

16. MULTI-STEP PROBLEM You buy a new car with a fuel efficiency of 31 miles per gallon on the highway and 26 miles per gallon in town. The gas tank holds 12.9 gallons. How far can you travel on the highway in your new car with a full tank of gas?

a. Write a verbal model for this problem.

b. Assign labels to each part of the verbal model.

c. Use the labels to translate the verbal model into an algebraic model.

d. Solve the algebraic model.

e. Answer the question.

f. How far can you travel *in town* in your new car with a full tank of gas?

17. MULTI-STEP PROBLEM The table below gives the average weight range for different types of dogs.

Dog	Average weight range (pounds)
Beagle	18–30
Bloodhound	80–100
Bulldog	40–50
Great Dane	120–150
Mastiff	165–185

▶ Source: American Kennel Club

a. For each type of dog, write the average weight range as a compound inequality.

b. For each type of dog, write the average weight range as an absolute value inequality.

c. *Writing* Choose one type of dog from the table. Explain how the two inequalities you wrote for the average weight range for this type of dog are related.