

Practicing for Standardized Tests

Because you work closely with your classmates and teachers on a daily basis, they have a good idea of what you know and are able to do with respect to the mathematics that you are studying this year. However, your school district or state department of education may ask you to take tests that they use to measure the achievement of all students, classes, or schools in the district or state.

External *standardized* tests usually contain questions in formats that can easily be scored to produce simple percent-correct ratings of your knowledge. If you want to perform well on such tests, it helps to have some practice with test items in a multiple-choice format. The following 10 sets of multiple-choice tasks have been designed to give you that kind of practice and to offer some strategic advice in working on such items. You will find helpful *Test Taking Tips* at the end of each of the practice sets.

Practice Set 1

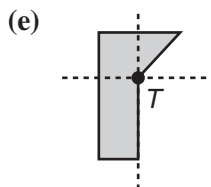
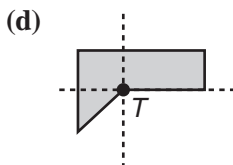
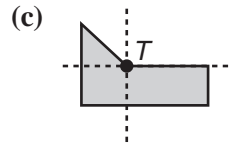
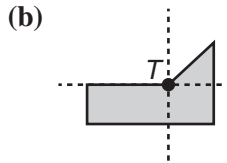
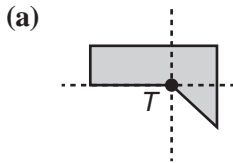
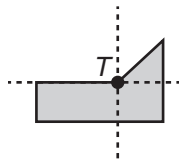
1. If N is an odd integer, which of the following numbers is also an odd integer?

- (a) $N \times N$ (b) $N + N$ (c) $3N - 1$
(d) $N - 1$ (e) $N + 5$

2. A T-shirt sells for \$18 in a retail store. If this price is 120% of the wholesale price, what is the wholesale price?

- (a) \$14.40 (b) \$15.00 (c) \$16.00
(d) \$16.20 (e) \$21.60

3. Which of the following figures is the result of a half-turn about point T of the figure below?



4. Jenny needs to pack 50 bagels in bags that hold 6 bagels each. What is the smallest number of bags Jenny will need to pack all the bagels?

- (a) 7 (b) 8 (c) 9
(d) 10 (e) 11

Practice Set 1

5. In a quadrilateral, two of the angles have a measure of 90° each. The measure of a third angle is 100° . What is the measure of the remaining angle?

- (a) 70° (b) 80° (c) 170°
(d) 190° (e) 280°

6. Each of six faces of a cube is painted either red or white. When the cube is tossed, the probability of the cube landing with a white face up is $\frac{1}{3}$. How many faces are white?

- (a) 1 (b) 2 (c) 3
(d) 4 (e) 5

7. If $a > 0$ and $b < 0$, which of the following must be negative?

- I. ab II. $\frac{a}{b}$ III. $a - b$

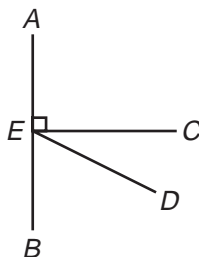
- (a) I only (b) II only
(c) III only (d) I and II
(e) All of them

8. Jane bought some peppermint patties. She gave half of them to her brother and then a third of those left to her sister. Now she has 6. How many peppermint patties did she buy?

- (a) 18 (b) 24 (c) 30
(d) 36 (e) 42

9. \overline{AB} , \overline{CE} , and \overline{DE} intersect at point E and the measure of $\angle AEC$ is 90° . The measure of $\angle BED$ is twice as much as the measure of $\angle CED$. What is the measure of $\angle CED$?

- (a) 15°
(b) 22.5°
(c) 30°
(d) 45°
(e) 60°



Practice Set 1

10. Which fraction has the greatest value?

(a) $\frac{5}{17}$

(b) $\frac{5}{15}$

(c) $\frac{5}{13}$

(d) $\frac{5}{11}$

(e) $\frac{5}{9}$

Test Taking Tip

Test general properties of numbers by using specific numbers.

Example Look back at Item 1 on page 98. To use this strategy, choose a specific odd number such as 3 to substitute for N in each of the listed expressions.

For choice (a): $3 \times 3 = 9$. 9 is an odd integer.

For choice (b): $3 + 3 = 6$. 6 is not an odd integer.

For choice (c): $3(3) - 1 = 8$. 8 is not an odd integer.

Explain why choices (d) and (e) are not correct choices. So, the answer is (a).

- Find, if possible, another test item in the practice set for which this strategy might be helpful. Try it.
- Keep this strategy in mind as you work on future practice sets.

Practice Set 2

1. What is the product of the values of the digit 2 in 13.265 and in 0.312?

- (a) 4 (b) $\frac{4}{10}$ (c) $\frac{4}{100}$
(d) $\frac{4}{1,000}$ (e) $\frac{4}{10,000}$

2. 2×39 is *not* equal to

- (a) $2 \times (30 + 9)$
(b) $2 \times (40 - 1)$
(c) $(2 \times 30) + 9$
(d) $(2 \times 9) + (2 \times 30)$
(e) $(2 \times 50) - [(2 \times 10) + (2 \times 1)]$

3. A librarian recorded that 10 students checked out books on Monday. Her records show the number of books each student checked out as follows:

3, 4, 5, 2, 2, 4, 3, 3, 2, 2

What is the average number of books these students checked out?

- (a) 2 (b) 3 (c) 4
(d) 5 (e) 10

4. Jay had 36 inches of wire. He bent the wire to form a square without any wire overlapping. What is the area in square inches of the square he formed?

- (a) 3 in.² (b) 9 in.² (c) 18 in.²
(d) 24 in.² (e) 81 in.²

5. Which of the following is the smallest?

- (a) $0.5 \div 10$
(b) 0.0052
(c) 0.05×10
(d) 5.0×10^{-4}
(e) 5.0×10^3

Practice Set 2

6. If 24 out of 30 students are wearing white shirts on a given day, what percent of the students are wearing other color shirts?

- (a) 6% (b) 10% (c) 20%
(d) 40% (e) 80%

7. Suppose $s = 2$ and $t = -3$. Find the value of $2st + (s^2t)$.

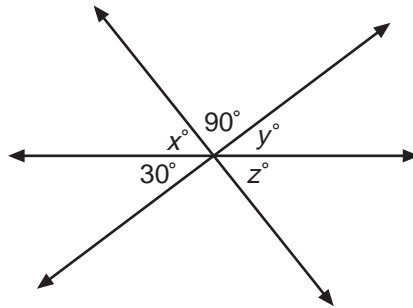
- (a) -144 (b) -24 (c) 0
(d) 24 (e) 144

8. $\frac{1}{10} \left(\frac{20}{3} + 10 \right) =$

- (a) 1 (b) $1\frac{2}{3}$ (c) $7\frac{2}{3}$
(d) $10\frac{2}{3}$ (e) $16\frac{2}{3}$

9. In the figure below, what is the value of $x + y + z$? *Note:* The figure is not drawn to scale.

- (a) 120°
(b) 150°
(c) 240°
(d) 270°
(e) 330°



Practice Set 2

10. Jim uses 0.8% of a 24-hour day for lunch. Approximately how many minutes does he take for his lunch?
- (a) 2 (b) 12 (c) 19
(d) 29 (e) 48

Test Taking Tip

Know and be able to use the distributive property.

The distributive property is useful in simplifying algebraic expressions. You must take care, however, to recognize when to use it and to use it correctly. The distributive property for multiplication over addition states that $a(b + c) = ab + ac$. In particular, $-(b + c) = -b + (-c)$.

Example Look back at Item 2 on page 101. Equivalent expressions may be substituted for 39, as in choices (a) and (b). Applying the distributive property to the expression in choice (a) yields the expression in choice (d), not that in choice (c). Note that the expression in choice (e) can be rewritten as follows:

$$2 \times [50 - (10 + 1)] = 2 \times (50 - 10 - 1) = 2 \times 39$$

So, the answer is (c).

- Find, if possible, another test item in the practice set which can be simplified using the distributive property. Try it.
- Keep this caution in mind as you work on future practice sets.

Practice Set 3

1. $-\frac{5}{6} \times \left(\frac{3}{10} - \frac{1}{2}\right) =$

(a) $-\frac{3}{4}$

(b) $-\frac{1}{4}$

(c) $-\frac{1}{6}$

(d) $\frac{1}{6}$

(e) $\frac{5}{12}$

2. Two hundred pounds of corn will feed 60 pigs for 1 day. How much corn will be needed to feed 90 pigs for 2 days?

(a) 300

(b) 400

(c) 600

(d) 1,200

(e) 2,400

3. What is 10% of 25% of 600?

(a) 15

(b) 60

(c) 90

(d) 150

(e) 210

4. Triangles ABC and DEF are similar. What is the length of \overline{EF} ?

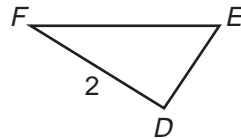
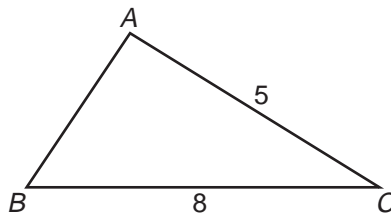
(a) 1.25

(b) 3.2

(c) 5

(d) 11

(e) 20



5. $\frac{x}{3} < 8$ is equivalent to

(a) $x < 24$

(b) $x < 5$

(c) $x < \frac{8}{3}$

(d) $x > 5$

(e) $x > 24$

6. Which list contains three equivalent fractions?

(a) $\frac{2}{3}, \frac{4}{6}, \frac{6}{8}$

(b) $\frac{3}{5}, \frac{5}{7}, \frac{6}{10}$

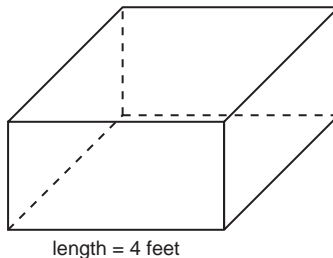
(c) $\frac{3}{4}, \frac{9}{12}, \frac{15}{18}$

(d) $\frac{3}{9}, \frac{6}{18}, \frac{12}{36}$

(e) $\frac{4}{6}, \frac{8}{14}, \frac{12}{21}$

Practice Set 3

7. What is the difference between the largest and smallest three-digit numbers that are divisible by 5?
- (a) 90 (b) 95 (c) 100
(d) 890 (e) 895
8. If the mean of a set of five numbers is 7 and one of the numbers in that set is 3, what is the average of the other four numbers?
- (a) 4 (b) 5 (c) 6
(d) 7 (e) 8
9. Evaluate each of the following expressions. Which has the largest value?
- (a) $3 - 2(-10)$ (b) $3 + 4(6 - 4)$ (c) $(2 - 5)^2 + 10$
(d) $3 \cdot 6 + 2 - 10$ (e) $3 + 4 \cdot 5 - 20$
10. A fish tank has the shape shown below. The width is three-fourths of the length, and the height is half of the length. What is the volume of the tank in cubic feet?
- (a) 9
(b) 18
(c) 24
(d) 34
(e) 68



Test Taking Tip

Be sure to apply arithmetic operations in the correct order: Operations within parentheses first, next exponentiation, next multiplication and division in order from left to right, and then addition and subtraction in order from left to right.

Example Look back at Item 9. To evaluate the expression in choice (a), first multiply 2 by -10 giving -20 , then subtract -20 from 3 to get 23.

- Evaluate the expressions in choices (b) through (e) using the correct order of operations to confirm that the expression with the largest value is choice (a).
- Keep the correct order of operations in mind as you evaluate expressions in your future work.

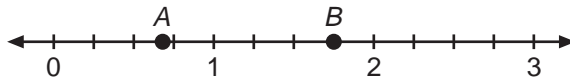
Practice Set 4

1. One pound of cherries costs \$1.99. If Nina buys 2 pounds of cherries and pays with a \$10 bill, how much change will she get back?

- (a) \$3.98 (b) \$6.02 (c) \$7.12
(d) \$8.01 (e) \$9.11

2. A and B are numbers shown on the number line below. What is $B - A$?

- (a) 0
(b) $\frac{1}{12}$
(c) $1\frac{1}{12}$
(d) $1\frac{5}{12}$
(e) $2\frac{1}{12}$

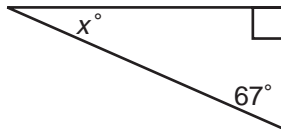


3. To obtain a certain color of purple paint, Mike combines 4 liters of red paint, 3 liters of blue paint, and 5 liters of white paint. What portion of the purple paint was white?

- (a) $\frac{7}{5}$ (b) $\frac{5}{7}$ (c) $\frac{12}{5}$ (d) $\frac{5}{12}$ (e) $\frac{7}{12}$

4. In the figure below, $x =$

- (a) 23
(b) 33
(c) 67
(d) 113
(e) 157



5. Which of the following lists three fractions in ascending order?

- (a) $\frac{5}{6}, \frac{4}{10}, \frac{6}{12}$ (b) $\frac{4}{10}, \frac{5}{6}, \frac{6}{12}$ (c) $\frac{5}{6}, \frac{6}{12}, \frac{4}{10}$
(d) $\frac{6}{12}, \frac{4}{10}, \frac{5}{6}$ (e) $\frac{4}{10}, \frac{6}{12}, \frac{5}{6}$

6. The price of an item last year was \$100. This year the price was increased by 20% then later decreased by 10%. What is the price of that item now?

- (a) \$101 (b) \$102 (c) \$108 (d) \$110 (e) \$118

Practice Set 4

7. A jar contains 54 balls: some blue, some white, some red, and some green. If the probability of selecting a green ball is $\frac{2}{9}$, how many green balls are in the jar?
- (a) 2 (b) 6 (c) 8 (d) 10 (e) 12
8. Which of the following is a *false* statement about whole numbers?
- (a) Every even number has 2 as a factor.
(b) Every number has 1 as a factor.
(c) Every odd number has 3 as a factor.
(d) Every composite number has at least 3 factors.
(e) Every prime number has exactly 2 factors.
9. Which of the following points can be joined to the point $(-3, 5)$ by a line segment that crosses *neither* the x -axis *nor* the y -axis?
- (a) $(5, -3)$ (b) $(-2, -3)$ (c) $(2, -3)$ (d) $(2, 3)$ (e) $(-2, 3)$
10. $\frac{12}{30}$ is equivalent to
- (a) 0.004% (b) 0.04% (c) 0.4% (d) 4% (e) 40%

Test Taking Tip

When feasible, use familiar benchmarks to compare fractions.

Fractions are easily compared to benchmarks such as $\frac{1}{2}$ or 1. These comparisons may save you the time of finding a common denominator.

Example Look back at Item 5 on page 106. To use this strategy, compare each fraction to $\frac{1}{2}$ as shown below.

$$\frac{4}{10} < \frac{1}{2}, \frac{6}{12} = \frac{1}{2}, \text{ and } \frac{5}{6} > \frac{1}{2}.$$

From these comparisons, it is easy to see how to list the given three fractions in ascending order without rewriting the fractions with a common denominator. The correct answer is (e).

- Find, if possible, another test item in the practice set for which this strategy might be helpful. Try it.
- Keep this strategy in mind as you work on future practice sets.

Practice Set 5

- The price of a pack of gum drops from 75 cents to 60 cents. What is the percent decrease of the price of the gum?
(a) 15% (b) 20% (c) 25%
(d) 30% (e) 35%
- Which number cannot be written as the quotient of two integers?
(a) 0 (b) $\sqrt{4}$ (c) $\sqrt{12}$
(d) 2.35 (e) 0.555...
- In a school, there is one teacher for every 25 students. Which of the following statements is *not true* about the relationship of the number of teachers T and number of students S at that school?
(a) $T = 25S$
(b) $25T = S$
(c) $\frac{T}{S} = \frac{1}{25}$
(d) $S - 25T = 0$
(e) There will be 7 teachers if there are 175 students.
- A parallelogram *must* be a square if:
(a) It has two pairs of congruent angles.
(b) Each pair of the parallel sides are congruent.
(c) All angles are right angles.
(d) All sides are congruent.
(e) It has one right angle and all sides are congruent.
- Pete and Andre each decided to start saving their money. Each month, Pete can save \$3 and Andre can save \$5. At this rate, after how many months will Andre have exactly \$10 more than Pete?
(a) 2 (b) 3 (c) 4
(d) 5 (e) 8

Practice Set 5

6. Ester started her trip with 14 gallons of gas in the tank of her car. Her car consumes 4.5 gallons of gas for every 100 miles driven. How many gallons of gas remained in the tank after she drove 250 miles?

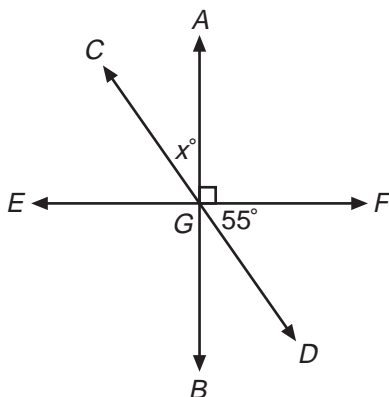
- (a) 2.75 (b) 3.25 (c) 3.75
(d) 11.25 (e) None of the above

7. If a is a positive integer and $a^2 = 4$, what is a^3 ?

- (a) 6 (b) 8 (c) 10
(d) 12 (e) 16

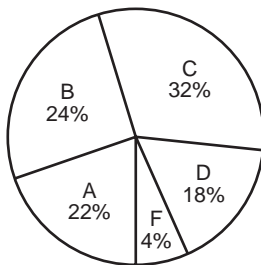
8. Lines AB , CD , and EF intersect at point G . What is the value of x ?

- (a) 35°
(b) 45°
(c) 55°
(d) 65°
(e) 145°



9. The circle graph below shows the distribution of grades for a mathematics test. If 250 students took the test, how many more students received a grade of C than received a grade of A?

- (a) 10
(b) 20
(c) 25
(d) 55
(e) 80



Practice Set 5

10. Samut drove his car to work for a week. He found that the total distance he traveled in that week was 320 miles, and he used 11.5 gallons of gas. Approximately how many miles can his car travel on one gallon of gas?

- (a) 24 miles per gallon
- (b) 25 miles per gallon
- (c) 26 miles per gallon
- (d) 28 miles per gallon
- (e) 30 miles per gallon

Test Taking Tip

Create a table to compare quantities in a problem situation.

You may find it easier to solve a problem by constructing a table of values when you are unsure of how to tackle the problem algebraically.

Example Look back at Item 5 on page 108. To use this strategy, create a table like the one below showing Pete's and Andre's savings at the end of each month.

Month	Pete's Savings	Andre's Savings
1	\$3	\$5
2	\$6	\$10
3	\$9	\$15
4	\$12	\$20
5	\$15	\$25

From the table, you can see that Andre has exactly \$10 more than Pete after 5 months of saving. So the answer is (d).

- Find, if possible, another test item from Practice Sets 1–5 for which this strategy might be helpful. Try it.
- Keep this strategy in mind as you work on the next practice set and in your future work.

Practice Set 6

1. What is the ratio of the length of a side of a square to its perimeter?

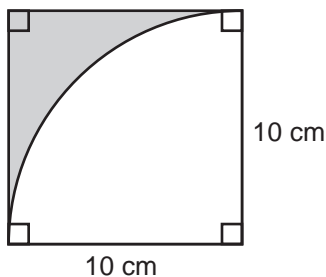
- (a) 1:1 (b) 1:2 (c) 1:4 (d) 2:1 (e) 4:1

2. $\frac{2}{3} \div \left(-\frac{1}{7} \times \frac{6}{7} \right) =$

- (a) $-\frac{49}{9}$ (b) -4 (c) $-\frac{14}{15}$ (d) $-\frac{7}{9}$ (e) $-\frac{4}{49}$

3. What is the area in square centimeters of the shaded portion of the figure below?

- (a) $100 - 100\pi$
 (b) $100 - 50\pi$
 (c) $100 - 25\pi$
 (d) $40 - 50\pi$
 (e) $40 - 25\pi$

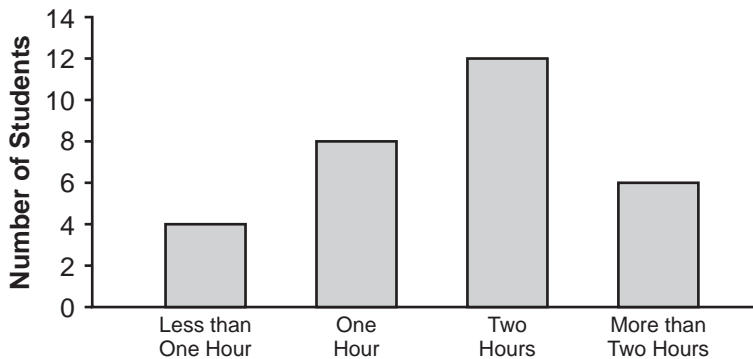


4. Which of the following numbers is *not* a prime number?

- (a) 41 (b) 53 (c) 79 (d) 83 (e) 93

5. The bar graph below shows the amount of time that 30 ninth-grade students spend on homework nightly. What percent of students spends less than two hours on their homework nightly?

- (a) 13.3%
 (b) 20.0%
 (c) 26.7%
 (d) 40.0%
 (e) 60.0%



6. Which of the following lists is ordered from largest to smallest?

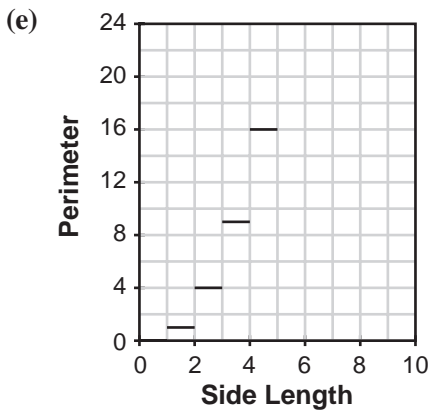
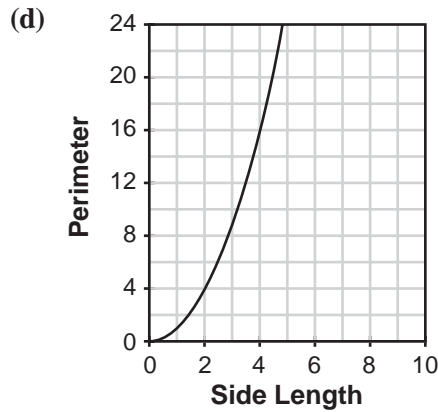
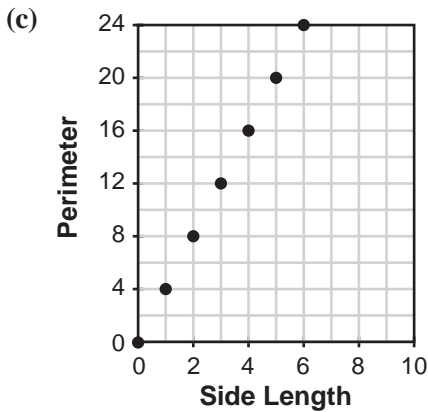
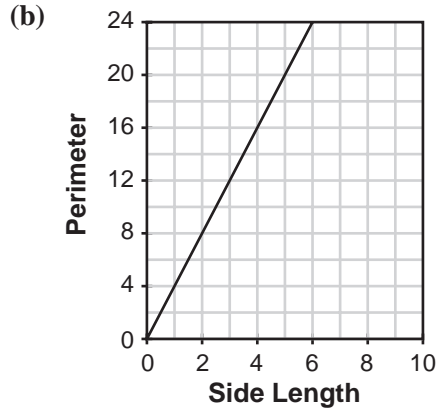
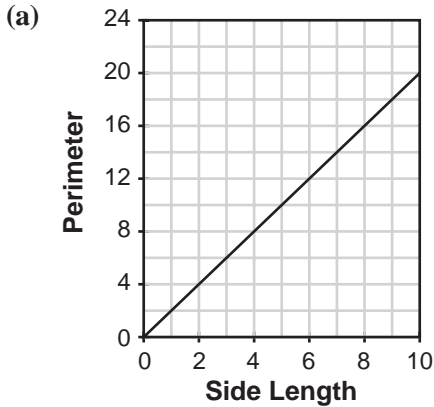
- (a) $0.19, 0.345, \frac{2}{3}, 0.7$ (b) $0.7, 0.19, 0.345, \frac{2}{3}$ (c) $\frac{2}{3}, 0.345, 0.19, 0.7$
 (d) $0.7, \frac{2}{3}, 0.345, 0.19$ (e) $0.19, \frac{2}{3}, 0.345, 0.7$

Practice Set 6

7. Through what angle does the minute hand of a clock turn as it moves from 12 to 4?

- (a) 20° (b) 40° (c) 110° (d) 120° (e) 150°

8. Which of the following graphs shows the relationship between the perimeter of a square and the length of a side?



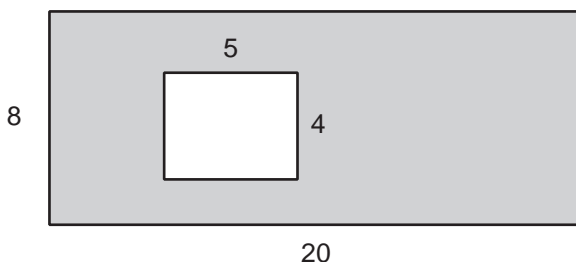
Practice Set 6

9. The table below shows the values of two variables, P and Q . If P is proportional to Q , what are the values of m and n ?

P	3	9	m
Q	5	n	30

- (a) $m = 15, n = 11$ (b) $m = 28, n = 11$ (c) $m = 15, n = 24$
(d) $m = 18, n = 15$ (e) $m = 15, n = 18$
10. What percent of the total area is shaded in the figure below?

- (a) 12.5%
(b) 20%
(c) 80%
(d) 87.5%
(e) 140%



Test Taking Tip

When finding the area of a region formed by overlapping figures, subtract the smaller area from the larger area.

Example Look back at Item 3 on page 111. To use this strategy, first determine the area of the square, then subtract the area of the quarter-circle.

$$\text{Area of the Square: } 10(10) = 100 \text{ cm}^2.$$

$$\text{Area of the Quarter-Circle: } \frac{1}{4}(\pi)(10^2) = 25\pi \text{ cm}^2.$$

The area of the shaded region is determined by subtracting these areas to obtain the expression

$$100 - 25\pi. \text{ So, the answer is (c).}$$

- Find, if possible, another item in the practice set for which this strategy might be helpful. Try it.
- Keep this strategy in mind as you work on future problems of this type.

Practice Set 7

1. If a is a positive integer and $a^2 = 4$, what is $(-3)^a$?
- (a) -9 (b) -6 (c) 6
(d) 8 (e) 9
2. Which fraction represents the largest value?
- (a) $\frac{6}{10}$ (b) $\frac{7}{9}$ (c) $\frac{5}{7}$
(d) $\frac{4}{5}$ (e) $\frac{3}{4}$
3. The perimeter of a rectangle is 28. The ratio of the width and length of the rectangle is 3:4. What is the length of a diagonal of the rectangle?
- (a) 5 (b) 10 (c) 20
(d) 22.1 (e) 22.8
4. One pound is approximately 0.454 kilograms. Sue weighs the equivalent of 55 kilograms. What is her approximate weight in pounds?
- (a) 25 lb (b) 108 lb (c) 110 lb
(d) 121 lb (e) 150 lb
5. The table below shows the number of books that a sample of 25 students carry to school. What is the median number of books?

Number of Books	Number of Students
3	3
4	5
5	7
6	5
7	5

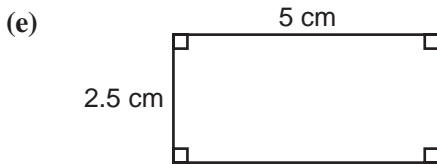
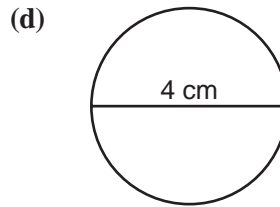
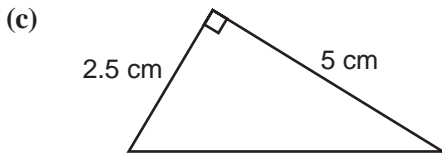
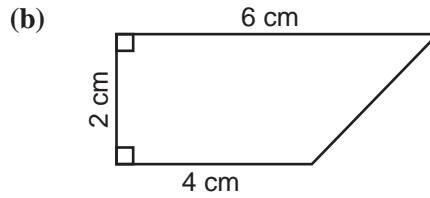
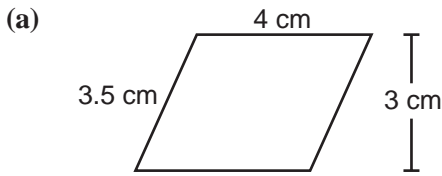
- (a) 3 (b) 4 (c) 5 (d) 6 (e) 7

Practice Set 7

6. Which of the following numbers is the smallest?
- (a) 3.2×10^{-3}
 - (b) 3.2×10^3
 - (c) 3.82×10^{-4}
 - (d) 3.82×10^4
 - (e) 3.82×10^{-3}
7. The enrollment at Cedar Creek High School this year is 1,250 students. Last year the enrollment was 1,000. By what percent did the enrollment change between last year and this year?
- (a) 20%
 - (b) 25%
 - (c) 80%
 - (d) 125%
 - (e) 250%
8. A number x is multiplied by itself and the result is added to 3 times the original number. This can be expressed algebraically as:
- (a) $x + 3$
 - (b) $x^2 + 3$
 - (c) $2x + 3$
 - (d) $x^2 + 3x$
 - (e) $2x + 3x$
9. A shop announces a clearance sale. The price of each item is 60% off. The original price of a watch is \$65. By how many dollars will the price of the watch be reduced?
- (a) \$26
 - (b) \$39
 - (c) \$46
 - (d) \$49
 - (e) \$56

Practice Set 7

10. Which figure has the largest area?



Test Taking Tip

Ratios and proportions can be helpful in solving problems involving percents.

Example Look back at Item 7 on page 115. The amount of change was 250 students. To find the percent change, use the ratio of change amount to the beginning value. So the percent change is equivalent to $\frac{250}{1,000} = \frac{25}{100}$ or 25%.

- Find, if possible, another test item in this practice set for which ratios and/or proportions can be used to help find a percentage.
- Keep this tip in mind as you work on future practice sets.

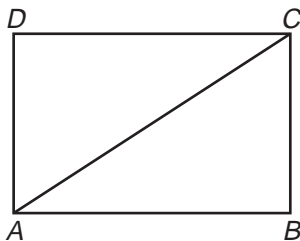
Practice Set 8

- If $19 + m = 28 + n$, what is $m - n$?
(a) -47 (b) -19 (c) 9
(d) 19 (e) 47
- What is the volume of a cube with a surface area of 24 square centimeters?
(a) 4 cm^3 (b) 8 cm^3 (c) 16 cm^3
(d) 32 cm^3 (e) 64 cm^3
- The area of a circle is 64π square inches. How many inches is the circumference of that circle?
(a) 4π (b) 8π (c) 16π (d) 32π (e) 64π
- Suppose the ratio of girls to boys in a class of 36 students is 5:4. How many boys are in the class?
(a) 9 (b) 16 (c) 17
(d) 20 (e) None of the above
- Manie has a $60 \text{ cm} \times 18 \text{ cm}$ piece of poster board. She wants to cover the poster board using several sheets of colored paper. If she cuts each piece of colored paper into squares of the same size, what is the largest size square that she can use to cover the poster board without overlapping the colored paper?
(a) $2 \text{ cm} \times 2 \text{ cm}$ (b) $3 \text{ cm} \times 3 \text{ cm}$ (c) $4 \text{ cm} \times 4 \text{ cm}$
(d) $6 \text{ cm} \times 6 \text{ cm}$ (e) $10 \text{ cm} \times 10 \text{ cm}$
- In which of the following lists are the numbers ordered from smallest to largest?
(a) 0, -1 , -7 , -9 , 2 (b) 0, -9 , -7 , -1 , 2 (c) -1 , -7 , -9 , 0, 2
(d) 0, 2, -1 , -7 , -9 (e) -9 , -7 , -1 , 0, 2
- 15% is equivalent to
(a) 0.15 (b) 1.5 (c) 10.5 (d) 15 (e) 150
- In a bag of chips, $\frac{1}{6}$ are green, $\frac{1}{4}$ are yellow, $\frac{1}{12}$ are blue, $\frac{1}{3}$ are white, and $\frac{1}{6}$ are red. If someone takes a chip from the bag without looking, which color is it most likely to be?
(a) Green (b) Yellow (c) Blue (d) White (e) Red

Practice Set 9

1. $ABCD$ is a rectangle. $AC = 10$, $BC = 6$. What is the perimeter of $ABCD$?

- (a) 8
- (b) 14
- (c) 28
- (d) 38
- (e) 48



2. Which digit of $\overline{0.2316}$ has a place value of $\frac{1}{1,000}$?

- (a) 0
- (b) 1
- (c) 2
- (d) 3
- (e) 6

3. $\frac{3}{5} + \left(-\frac{4}{6} + \frac{5}{6}\right) =$

- (a) $\frac{1}{30}$
- (b) $\frac{4}{30}$
- (c) $\frac{13}{30}$
- (d) $\frac{23}{30}$
- (e) $\frac{63}{30}$

4. Which of the following is *not* equivalent to $\frac{12}{20}$?

- (a) $\frac{3}{5}$
- (b) $\frac{15}{25}$
- (c) $\frac{21}{35}$
- (d) $\frac{27}{40}$
- (e) $\frac{36}{60}$

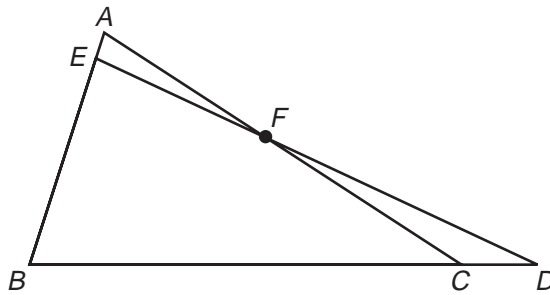
5. Supa has 3 ribbons of different colors and lengths. She has 3.5 meters of blue ribbon, 4.9 meters of red ribbon, and 5.6 meters of white ribbon. She would like to cut these ribbons so that all pieces of the three different-colored ribbons have the same length. What is the longest length into which she could cut the ribbons?

- (a) 0.3 meters
- (b) 0.5 meters
- (c) 0.7 meters
- (d) 0.9 meters
- (e) 1.1 meters

Practice Set 9

6. In the figure shown below, $m\angle A$ is 75° , $m\angle D$ is 25° , and $m\angle EFC$ is 170° . Find the degree measure of $\angle EBC$.

- (a) 35°
- (b) 70°
- (c) 85°
- (d) 95°
- (e) 145°

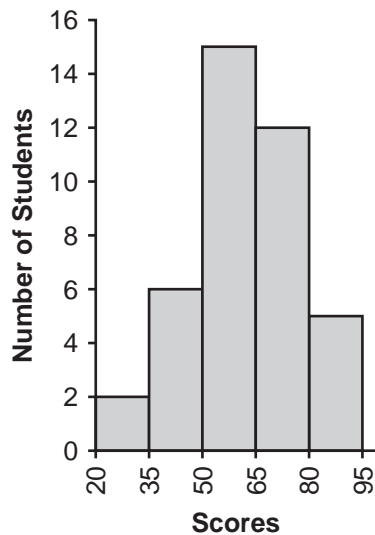


7. If $6x - 4 = 16$, then $x =$

- (a) 2
- (b) $\frac{7}{3}$
- (c) $\frac{10}{3}$
- (d) $\frac{20}{3}$
- (e) 20

8. The histogram at the right shows test scores for 40 students. What percent of the students scored at least 65?

- (a) 17%
- (b) 30%
- (c) 42.5%
- (d) 50%
- (e) 57.5%



Practice Set 9

9. If $x = -\frac{3}{2}$, then what is the value of $5 + 4x$?

(a) -13.5

(b) -1

(c) 1.5

(d) 3

(e) 8.5

10. If the sum of three consecutive odd integers is 15, what is the largest of those three integers?

(a) 5

(b) 7

(c) 9

(d) 11

(e) 13

Test Taking Tip

Equivalent fractions are generated by multiplying by various forms of 1.

Example Look back at Item 4 on page 119. To use this strategy, test each choice to determine if the reduced form of $\frac{12}{20}$ or $\frac{3}{5}$ can be multiplied by a form of 1 to obtain the fraction in that choice.

Choice (a): $\frac{3}{5} \cdot \frac{1}{1} = \frac{3}{5}$

Choice (b): $\frac{3}{5} \cdot \frac{5}{5} = \frac{15}{25}$

Show that choices (c) and (e) are also equivalent to $\frac{12}{20}$ by multiplying $\frac{3}{5}$ by other forms of 1 to obtain each choice.

Choice (d): $\frac{3}{5} \cdot \frac{9}{9} = \frac{27}{45} \neq \frac{27}{40}$, so $\frac{12}{20} \neq \frac{27}{40}$

So, the answer is (d).

- Find, if possible, another test item in the practice set for which this strategy might be helpful. Try it.
- Keep this strategy in mind as you work on future practice sets.

Practice Set 10

1. If $a = 2$ and $b = 3$, then what is $(ab)^2$?

- (a) 23×23 (b) $23 + 23$ (c) $2 \times 2 \times 3$
(d) $2 \times 3 \times 2 \times 3$ (e) $2 \times 3 \times 3$

2. For five days, a student paid an average of \$4 per day for lunch. How much money did the student pay for lunches for the five days?

- (a) \$1.25 (b) \$4.00 (c) \$5.00
(d) \$16.00 (e) \$20.00

3. 32 is 16% of

- (a) 160 (b) 200 (c) 250
(d) 300 (e) 400

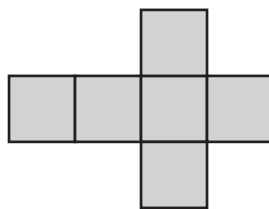
4. Which equation describes the relationship in the table shown below?

x	-1	0	1	2	3	4
y	-7	-5	-3	-1	1	3

- (a) $y = x - 5$
(b) $y = x - 6$
(c) $y = 2x - 5$
(d) $y = -x - 5$
(e) $y = \frac{1}{2}x - 5$

5. The figure below consists of 6 congruent squares. The area of the entire figure is 54 square centimeters. What is the perimeter of the figure?

- (a) 42 cm
(b) 45 cm
(c) 54 cm
(d) 60 cm
(e) 72 cm



Practice Set 10

6. Which of the following numbers is 86.0749 rounded to the nearest hundredth?
- (a) 86.07 (b) 86.08 (c) 86.10
(d) 90.00 (e) 100.00
7. Which ratio is not equivalent to 21:14?
- (a) 33:22 (b) 18:12 (c) 15:10
(d) 8:6 (e) 6:4
8. For positive integers x , y , and z , if $\frac{1}{x} > \frac{1}{y} > \frac{1}{z}$, then which of the following statements is *false*?
- (a) $x < y$ (b) $x - z < 0$ (c) $y < z$
(d) $x - y < 0$ (e) $z < x$
9. If $n = 8$, then what is the value of $\frac{216}{3n - 6}$?
- (a) 3 (b) 12 (c) 36 (d) 75 (e) 570
10. Point A has coordinates $(-3, 5)$. When using the y -axis as a reflection line, the image of point A is point B . What are the coordinates of point B ?
- (a) $(3, -5)$ (b) $(-3, -5)$ (c) $(5, 3)$
(d) $(5, -3)$ (e) $(3, 5)$

Test Taking Tip

Reciprocals and opposites reverse order relations.

If x and y are both positive or both negative and $x < y$, then $\frac{1}{x} > \frac{1}{y}$, and $-x > -y$.

Example Look back at Item 8. The relationships among x , y , and z are the reverse of the relationships among their reciprocals. Since $\frac{1}{x} > \frac{1}{y} > \frac{1}{z}$, $x < y < z$. Choices (a) and (c) are clearly true from this observation. Choices (b) and (d) are true because subtracting a larger positive integer from a smaller positive integer will always yield a number less than 0. Choice (e) is false since the order relation should be reversed. So, the answer is (e).

- Look back at Practice Sets 1–10 and identify the items for which this reminder might be helpful.
- Keep this fact in mind in your future work with inequalities.

Solutions to Practice Sets for Standardized Tests

Practice Set 1, pp. 98–100

1. (a)
2. (b)
3. (d)
4. (c)
5. (b)
6. (b)
7. (d)
8. (a)
9. (c)
10. (e)

Practice Set 2, pp. 101–103

1. (e)
2. (c)
3. (b)
4. (e)
5. (d)
6. (c)
7. (b)
8. (b)
9. (b)
10. (b)

Practice Set 3, pp. 104–105

1. (d)
2. (c)
3. (a)
4. (b)
5. (a)
6. (d)
7. (e)
8. (e)
9. (a)
10. (c)

Practice Set 4, pp. 106–107

1. (b)
2. (c)
3. (d)
4. (a)
5. (e)
6. (c)
7. (e)
8. (c)
9. (e)
10. (e)

Practice Set 5, pp. 108–110

1. (b)
2. (c)
3. (a)
4. (e)
5. (d)
6. (a)
7. (b)
8. (a)
9. (c)
10. (d)

Practice Set 6, pp. 111–113

1. (c)
2. (a)
3. (c)
4. (e)
5. (d)
6. (d)
7. (d)
8. (b)
9. (d)
10. (d)

Practice Set 7, pp. 114–116

1. (e)
2. (d)
3. (b)
4. (d)
5. (c)
6. (c)
7. (b)
8. (d)
9. (b)
10. (d)

Practice Set 8, pp. 117–118

1. (c)
2. (b)
3. (c)
4. (b)
5. (d)
6. (e)
7. (a)
8. (d)
9. (a)
10. (b)

Practice Set 9, pp. 119–121

1. (c)
2. (b)
3. (d)
4. (d)
5. (c)
6. (b)
7. (c)
8. (c)
9. (b)
10. (b)

Practice Set 10, pp. 122–123

1. (d)
2. (e)
3. (b)
4. (c)
5. (a)
6. (a)
7. (d)
8. (e)
9. (b)
10. (e)