1. How many of these tiles are needed to cover an area of 108 square inches?

A 9  
B 12  
C 21  
D 39

2. Which has the **smallest** area?
A a rectangle 9 in. × 4 in.  
B a square 12 in. × 1 ft  
C a rectangle 1 ft × 3 ft  
D a square 1 yd × 1 yd

3. Donny wants to put carpet on the floor of his tree house.

He bought 35 sq ft of old carpet at a garage sale. How will Donny figure out if he has enough carpet to cover the floor of his tree house?
A Compare (5 ft + 6 ft) to 35 sq ft.  
B Compare (5 ft × 6 ft) to 35 sq ft.  
C Compare (5 ft + 6 ft + 5 ft + 6 ft) to 35 sq ft.  
D Compare (5 ft × 6 ft × 5 ft × 6 ft) to 35 sq ft.
4. Marie has a piece of material that measures 1 yard on a side.

How many square inches of material does she have?

A 9 square inches
B 144 square inches
C 432 square inches
D 1,296 square inches

5. Toni has 5 square yards of carpet to cover the floor of one of the closets in her house. For which closet would she need more carpet?

A \(4 \text{ ft} \times 10 \frac{1}{2} \text{ ft}\)
B \(4 \frac{1}{2} \text{ ft} \times 8 \text{ ft}\)
C \(5 \text{ ft} \times 10 \text{ ft}\)
D \(9 \text{ ft} \times 5 \text{ ft}\)

6. Alyssa wants to put a wallpaper border around the top of her bedroom walls. Her room is rectangular and is 12 ft long, 11 ft wide, and 8 ft tall.

How many feet of border should she purchase in order to have just enough border to go around the top of the walls?

A 23 ft
B 46 ft
C 132 ft
D 1,056 ft

7. Belinda is buying tile for her kitchen. The room measures 12 feet by 15 feet. How many square feet of tile will she need to buy?

A 54 square feet
B 72 square feet
C 180 square feet
D 185 square feet
8. Each side of a square is 8 cm.

A rectangle has the same perimeter, but its length is 10 cm.

What is its width?
A  6 cm
B  11 cm
C  12 cm
D  22 cm

9. Which of the following figures has the least number of edges?

A

B

C

D

10. Kevin drew a diagonal inside a quadrilateral and made 2 equilateral triangles. What kind of quadrilateral did Kevin use to draw the triangles?

A  rhombus
B  pentagon
C  rectangle
D  trapezoid
11. Which statement correctly compares this parallelogram and this rectangle?

- A Both figures are polygons with pairs of opposite sides parallel.
- B Both figures are polygons with four right angles.
- C Both figures are polygons whose interior angles total 180 degrees.
- D Both figures are polygons with at least two acute angles.

12. Jill wants to make a triangular base pyramid out of marshmallows and toothpicks. She will use a marshmallow for a vertex and a toothpick for an edge. How many marshmallows and toothpicks will she need?

- A 4 marshmallows and 8 toothpicks
- B 4 marshmallows and 6 toothpicks
- C 5 marshmallows and 8 toothpicks
- D 5 marshmallows and 7 toothpicks

13. If Tanya is drawing a circle with the opening of the compass set at 3 inches, how can she find the diameter of her circle?

- A She can use the compass setting as the diameter.
- B She can multiply 3 inches by 2.
- C She can add 3 inches to 2 inches.
- D She can divide 3 inches by 2.

14. Diane is making a sundial.

If radius $FH$ is 7 cm, what is the length of the longest chord in circle $H$?

- A 7 cm
- B 9 cm
- C 14 cm
- D 21 cm
15. What statement is true about circle A below?

A The distance from E to F is the same as the distance from B to C.
B The distance from E to F is the same as the distance from A to D.
C The distance from B to C is half the distance from A to B.
D The distance from B to C is twice the distance from A to D.

16. The town council wants to have a circular walking trail around the park.

About how long will the whole walking trail be?

A 2 miles
B 6 miles
C 8 miles
D 12 miles

17. What is the measure of $\angle B$ in triangle $ABC$?

A $55^\circ$
B $80^\circ$
C $125^\circ$
D $180^\circ$
18. Sara and her friend used similar triangles to find a relationship between the width of the river and the distance $MN$.

If $\triangle LMN$ is similar to $\triangle LKT$, and the measure of angle $N$ is $62^\circ$, which angle has the same measure as angle $N$?

A  $K$
B  $L$
C  $M$
D  $T$
19. Jan was using a geoboard to make plane figures. Which model shows similar plane figures?

A

B

C

D

20. The total area of two walls is 23 m\(^2\). A roll of wallpaper covers 8 m\(^2\). The store sells only full rolls. What is the fewest number of rolls needed to cover the two walls?

A 1 roll

B 2 rolls

C 3 rolls

D 4 rolls

21. When Malcolm got up one morning, the temperature was 41°F. The temperature rose 13° by 4 p.m., but from 4 p.m. to 6 p.m. the temperature decreased 7° per hour. What was the temperature when Malcolm got home at 6 p.m.?

A 21°F

B 33°F

C 40°F

D 42°F
22. On Megan’s trip to her grandmother’s, she spent 35 minutes on the airplane from Charlotte to Washington, D.C.; 1 hour and 15 minutes from Washington to New York; and 45 minutes from New York to Boston. If she is planning a round trip, how long can she count on being on an airplane?

A 5 hr 10 min  
B 4 hr 10 min  
C 2 hr 35 min  
D 2 hr 10 min

23. Carl bought two cans of juice. Each can holds 700 mL. How many more milliliters of juice are needed to fill a 2-liter pitcher?

A 100  
B 300  
C 400  
D 600

24. Quinn walked around the edge of a rectangular field which was 85 feet long. If Quinn walked 296 feet, how wide was the field?

A 63 feet  
B 105.5 feet  
C 126 feet  
D 211 feet

25. During recess Kent helped some third-grade students practice making change. Kent said he bought a comic book for $3.25, and he gave the cashier four one-dollar bills. The students all told him the correct change in different coin combinations.

Sam said 3 coins.  
Mary said 5 coins.  
Leah said 7 coins.  
Teri said 11 coins.

Which student told Kent one quarter and the rest nickels?

A Sam  
B Mary  
C Leah  
D Teri
26. Nathan, Carmen, Vanessa, and Kari timed a snail to see how far it traveled in 10 minutes. It moved 12 inches. They wanted to figure out how long the snail would take to travel one mile. Nathan said there were 5,280 feet in a mile. What could the students do to determine how many hours it would take the snail to go one mile?

A They could divide 5,280 feet by 10 to get 528 minutes, then multiply by 12, and divide by 6.

B They could divide 10 minutes into 60 to get 6 feet per hour, then divide 5,280 feet by 6.

C They could multiply 10 minutes by 12 inches, then multiply by 5,280 feet and divide by 60.

D They could divide 5,280 feet by 10 to get 528 minutes, then multiply by 60 and divide by 24.

27. Joseph’s book has 270 pages. If he needs to read 45 pages a day during the next four days to finish his book, how many pages has he already read?

A 90

B 180

C 225

D 315

End of Goal 2 Sample Items
1. **Objective 2.01**
   Use and make models to demonstrate formulas for the area and perimeter of squares and rectangles, to compare units of area within the same system, and to investigate and compare units of volume.
   **Thinking Skill:** Integrating  
   **Correct Answer:** B

2. **Objective 2.01**
   Use and make models to demonstrate formulas for the area and perimeter of squares and rectangles, to compare units of area within the same system, and to investigate and compare units of volume.
   **Thinking Skill:** Applying  
   **Correct Answer:** A

3. **Objective 2.01**
   Use and make models to demonstrate formulas for the area and perimeter of squares and rectangles, to compare units of area within the same system, and to investigate and compare units of volume.
   **Thinking Skill:** Analyzing  
   **Correct Answer:** B

4. **Objective 2.01**
   Use and make models to demonstrate formulas for the area and perimeter of squares and rectangles, to compare units of area within the same system, and to investigate and compare units of volume.
   **Thinking Skill:** Integrating  
   **Correct Answer:** D

5. **Objective 2.02**
   Calculate the area and perimeter of rectangles and the perimeters of plane figures.
   **Thinking Skill:** Integrating  
   **Correct Answer:** C

6. **Objective 2.02**
   Calculate the area and perimeter of rectangles and the perimeters of plane figures.
   **Thinking Skill:** Applying  
   **Correct Answer:** B

7. **Objective 2.02**
   Calculate the area and perimeter of rectangles and the perimeters of plane figures.
   **Thinking Skill:** Applying  
   **Correct Answer:** C

8. **Objective 2.02**
   Calculate the area and perimeter of rectangles and the perimeters of plane figures.
   **Thinking Skill:** Integrating  
   **Correct Answer:** A
9. **Objective 2.03**
   Use concrete and pictorial representations and appropriate vocabulary to compare and classify polygons and polyhedra; create models of polyhedra (cubes, cylinders, cones prisms, and pyramids.)
   **Thinking Skill:** Analyzing  
   **Correct Answer:** D

10. **Objective 2.03**
    Use concrete and pictorial representations and appropriate vocabulary to compare and classify polygons and polyhedra; create models of polyhedra (cubes, cylinders, cones prisms, and pyramids.)
    **Thinking Skill:** Integrating  
    **Correct Answer:** A

11. **Objective 2.03**
    Use concrete and pictorial representations and appropriate vocabulary to compare and classify polygons and polyhedra; create models of polyhedra (cubes, cylinders, cones prisms, and pyramids.)
    **Thinking Skill:** Analyzing  
    **Correct Answer:** A

12. **Objective 2.03**
    Use concrete and pictorial representations and appropriate vocabulary to compare and classify polygons and polyhedra; create models of polyhedra (cubes, cylinders, cones prisms, and pyramids.)
    **Thinking Skill:** Analyzing  
    **Correct Answer:** B

13. **Objective 2.04**
    Use a compass to draw circles; identify and determine the relationships among the radius, diameter, chord, center, and circumference.
    **Thinking Skill:** Analyzing  
    **Correct Answer:** B

14. **Objective 2.04**
    Use a compass to draw circles; identify and determine the relationships among the radius, diameter, chord, center, and circumference.
    **Thinking Skill:** Analyzing  
    **Correct Answer:** C

15. **Objective 2.04**
    Use a compass to draw circles; identify and determine the relationships among the radius, diameter, chord, center, and circumference.
    **Thinking Skill:** Analyzing  
    **Correct Answer:** D

16. **Objective 2.04**
    Use a compass to draw circles; identify and determine the relationships among the radius, diameter, chord, center, and circumference.
    **Thinking Skill:** Applying  
    **Correct Answer:** B
17. **Objective 2.06**
   Use a variety of quadrilaterals and triangles to draw conclusions about the sum of the measures of the interior angles; use appropriate technology.
   **Thinking Skill:** Applying  **Correct Answer:** A

18. **Objective 2.08**
   Investigate similar figures using rulers and protractors.
   **Thinking Skill:** Analyzing  **Correct Answer:** D

19. **Objective 2.08**
   Investigate similar figures using rulers and protractors.
   **Thinking Skill:** Analyzing  **Correct Answer:** C

20. **Objective 2.09**
   Use an organized approach, appropriate strategies, and technology as needed to solve multi-step problems involving geometry, spatial visualization, and measurement (length, weight, time, capacity, temperature, perimeter, area, volume.)
   **Thinking Skill:** Integrating  **Correct Answer:** C

21. **Objective 2.09**
   Use an organized approach, appropriate strategies, and technology as needed to solve multi-step problems involving geometry, spatial visualization, and measurement (length, weight, time, capacity, temperature, perimeter, area, volume.)
   **Thinking Skill:** Applying  **Correct Answer:** C

22. **Objective 2.09**
   Use an organized approach, appropriate strategies, and technology as needed to solve multi-step problems involving geometry, spatial visualization, and measurement (length, weight, time, capacity, temperature, perimeter, area, volume.)
   **Thinking Skill:** Integrating  **Correct Answer:** A

23. **Objective 2.09**
   Use an organized approach, appropriate strategies, and technology as needed to solve multi-step problems involving geometry, spatial visualization, and measurement (length, weight, time, capacity, temperature, perimeter, area, volume.)
   **Thinking Skill:** Analyzing  **Correct Answer:** D
24. **Objective 2.09**
   Use an organized approach, appropriate strategies, and technology as needed to solve multi-step problems involving geometry, spatial visualization, and measurement (length, weight, time, capacity, temperature, perimeter, area, volume.)
   Thinking Skill: Integrating  
   Correct Answer: A

25. **Objective 2.10**
   Verify and interpret results with respect to the original problem; identify alternate strategies. Use calculators and computers as appropriate.
   Thinking Skill: Analyzing  
   Correct Answer: D

26. **Objective 2.10**
   Verify and interpret results with respect to the original problem; identify alternate strategies. Use calculators and computers as appropriate.
   Thinking Skill: Analyzing  
   Correct Answer: B

27. **Objective 2.10**
   Verify and interpret results with respect to the original problem; identify alternate strategies. Use calculators and computers as appropriate.
   Thinking Skill: Applying  
   Correct Answer: A