

# **CTB/McGraw-Hill**

## **Grade 7 Benchmark 2 Math**

### **Test ID: 76848**

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## Test Directions

**General Offline Instructions:**

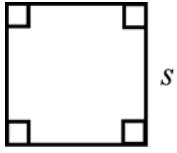
Today you will take the Acuity test. Read each question carefully and decide which answer is correct. Using your scan sheet, fill in the bubble that contains the letter for the answer you choose.

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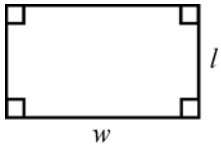
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## Reference Sheet

You may use calculator  $\pi$  or the number 3.14

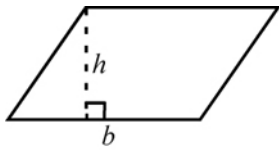


$$A = s \times s$$

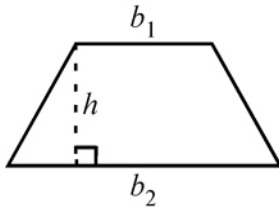


$$P = 2l + 2w$$

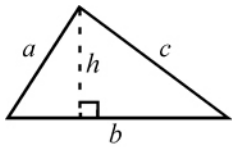
$$A = lw$$



$$A = bh$$

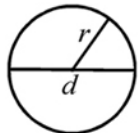


$$A = \frac{1}{2}h(b_1 + b_2)$$



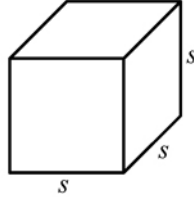
$$P = a + b + c$$

$$A = \frac{1}{2}bh$$



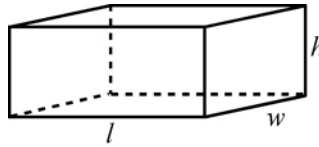
$$C = 2\pi r$$

$$A = \pi r^2$$



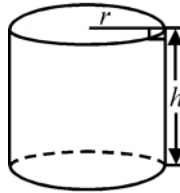
$$SA = 6s^2$$

$$V = s \times s \times s$$

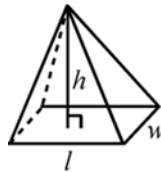


$$SA = 2lw + 2lh + 2wh$$

$$V = lwh$$



$$V = \pi r^2 h$$



$$V = \frac{1}{3}lwh$$

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**Customary Conversions:**

1 yard (yd) = 3 feet (ft)

1 foot = 12 inches (in.)

1 pound (lb) = 16 ounces (oz.)

1 gallon (gal) = 4 quarts (qt)

1 quart = 2 pints (pt)

1 pint = 2 cups (c)

1 cup = 8 fluid ounces

1 day = 24 hours (hr)

1 hour = 60 minutes (min)

1 minute = 60 seconds (sec)

**Metric Conversions:**

1 kilometer = 1000 meters

1 hectometer = 100 meters

1 dekameter = 10 meters

1 meter

1 decimeter = 0.1 meter

1 centimeter = 0.01 meter

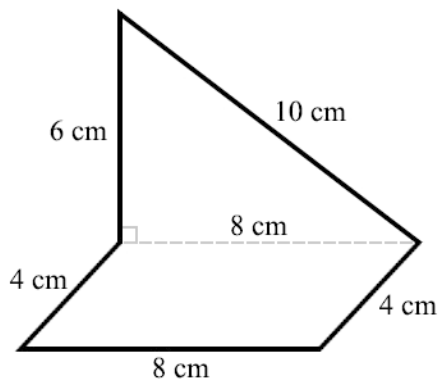
1 millimeter = 0.001 meter

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1. Anna paints miniature toy animals. She can paint 3 horses in 15 minutes, 4 cows in 24 minutes, 6 ducks in 18 minutes, and 5 pigs in 20 minutes. At these rates, which miniature toy animal can Anna paint most quickly?

- A pigs
- B cows
- C ducks
- D horses

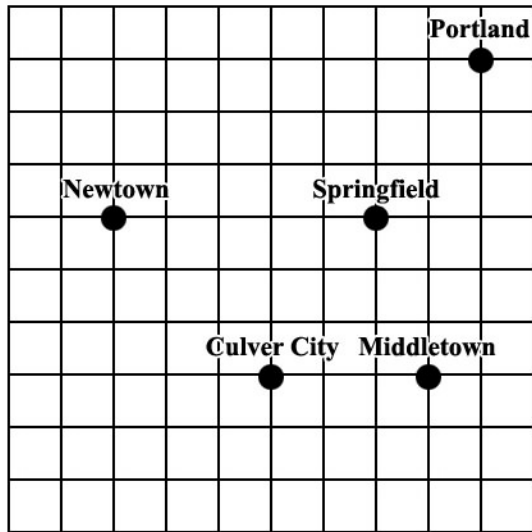
2. Look at this object.



What is the perimeter of this object?

- A 24 centimeters
- B 48 centimeters
- C 40 centimeters
- D 32 centimeters

3. Look at the map shown.



□ = 15 miles

What is the actual distance from Newtown to Springfield?

- A 15 miles
- B 5 miles
- C 75 miles
- D 20 miles

4.

Hillary wants to calculate how much water she needs in order to fill her pool. Which measurement does Hillary need in order to fill her pool?

- A area
- B circumference
- C perimeter
- D volume

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5. Laurie jogs 21 meters in 6 seconds. If she maintains the same speed, how many meters will she jog in 4 seconds?

A 84

B  $\frac{1}{14}$

C 31.5

D 14

6. If the diameter of a circle were multiplied by 5, by what factor would the circumference increase?

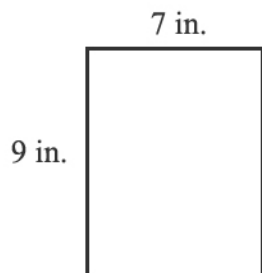
A 5

B 25

C 20

D 10

7. Look at the rectangle.



What is the area of the rectangle?

A 81 square inches

B 63 square inches

C 16 square inches

D 32 square inches

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8. Which proportion is correct?

A  $\frac{3}{12} = \frac{2}{6}$

B  $\frac{4}{12} = \frac{2}{8}$

C  $\frac{2}{8} = \frac{3}{12}$

D  $\frac{2}{6} = \frac{3}{8}$

9. Debbie wants to find the amount of material she needs to cover all sides of a rectangular cushion on her couch. What type of measurement should she use?

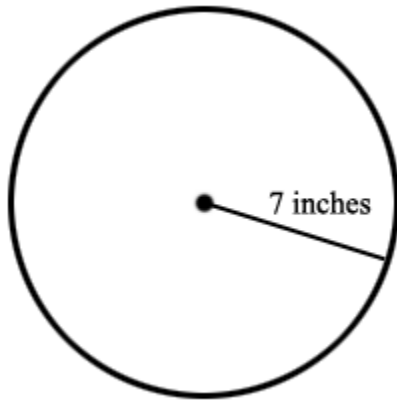
- A area
- B volume
- C surface area
- D circumference

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10. Look at this circle.



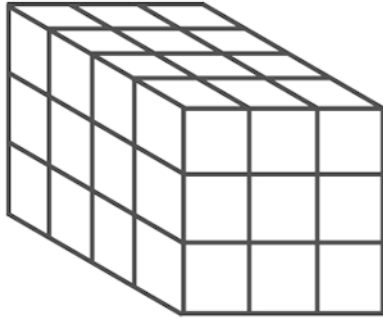
What is the circumference of the circle?

Circumference of a circle:  $C = 2\pi r$

- A  $784\pi$  inches
  - B  $49\pi$  inches
  - C  $28\pi$  inches
  - D  $14\pi$  inches
11. What is  $\frac{36}{80}$  written as a decimal?
- A 0.80
  - B 0.45
  - C 2.22
  - D 0.36

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12. Look at this rectangular prism.



What is the volume of the rectangular prism?

- A 24 cubic units
  - B 33 cubic units
  - C 36 cubic units
  - D 66 cubic units
13. At Quick Stop Grocery, bags of oranges are sold in four sizes. The 3-pound bag costs \$1.74, the 8-pound bag costs \$4.96, the 2-pound bag costs \$1.76, and the 5-pound bag costs \$2.80. Which is the lowest cost per pound?
- A 8 pounds for \$4.96
  - B 5 pounds for \$2.80
  - C 3 pounds for \$1.74
  - D 2 pounds for \$1.76
14. The ratio of ducks to squirrels in a park is 4 to 5. With this ratio, which of these could be the number of ducks and squirrels in the park?
- A 5 ducks : 4 squirrels
  - B 4 ducks : 15 squirrels
  - C 12 ducks : 10 squirrels
  - D 12 ducks : 15 squirrels

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15. David's scarf is 5 feet 2 inches long. Janet's scarf is 3 feet 9 inches long. How much shorter is Janet's scarf than David's?
- A 2 feet 7 inches
  - B 1 foot 5 inches
  - C 2 feet 5 inches
  - D 1 foot 3 inches

16. Lisa wants to calculate how much carpet she needs to cover the floor in her room. Which measurement does Lisa need to find in order to carpet her room?
- A area
  - B mass
  - C perimeter
  - D volume

17. The table shows information about some workers in a watch factory.

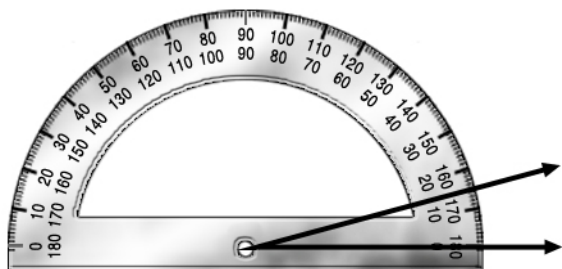
Worker	Watches Assembled per Hour	Number of Watches Assembled
Anna	2	4
Ben	8	48
Lars	4	32
Stephen	6	18

Who spent the most time assembling watches?

- A Anna
- B Ben
- C Lars
- D Stephen

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18. Look at the angle shown.



Which of these is the measure of this angle?

- A  $20^\circ$
- B  $15^\circ$
- C  $165^\circ$
- D  $10^\circ$

19. The ratios 6:8 and 3:4 are equivalent. Which statement expresses the ratios as a proportion?

- A  $\frac{8}{6} = \frac{3}{4}$
- B  $\frac{4}{8} = \frac{6}{3}$
- C  $\frac{6}{8} = \frac{4}{3}$
- D  $\frac{6}{8} = \frac{3}{4}$

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20. A bicycle wheel has a radius of 12 inches.

What is the circumference of the wheel, rounded to the nearest tenth of an inch?

- A 452.2 inches
  - B 27.1 inches
  - C 18.8 inches
  - D 75.4 inches
21. The ratio of blue to purple beads in a necklace is 2 to 5. If a necklace has 6 blue beads, how many purple beads must the necklace have in all?
- A 9 purple beads
  - B 15 purple beads
  - C 10 purple beads
  - D 20 purple beads
22. A librarian calculated that 14% of the books returned to the library were overdue. What is the ratio of the number of overdue books to the total number of books returned?

A  $\frac{7}{50}$

B  $\frac{7}{500}$

C  $\frac{50}{7}$

D  $\frac{7}{5}$

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23. What is the volume, in cubic feet, of a cube with side lengths of 4 feet?
- A 16
  - B 96
  - C 64
  - D 12
24. The ratio of the number of students sitting at 7 tables is 35:7. If each table has the same number of students, which ratio shows the number of students at one table?
- A 5:1
  - B 4:1
  - C 28:1
  - D 6:1
25. Gus brings a square folding table to a picnic. Each side is 54 inches long. What is the area of the square top of the folding table, in square inches?
- A 108
  - B 216
  - C 2,816
  - D 2,916

**This is the end of the test.**