

Grade 7 Math Benchmark 2

Directions: Read each question and choose the best answer. For questions 1 and 2, you are not permitted to use a calculator.



1. Simplify:

$$3^2 + (6 - 4) \times 2$$

- A 7
- B 13
- C 22
- D 38

2. Simplify:

$$(1 + 1)^3 + 7 \times 3$$

- A 23
- B 27
- C 29
- D 45

Do not return to the first part of the assessment
after beginning question 3.

3. Oranges at the corner store cost \$0.49 each. About how much do 8 oranges cost?

A \$4.00
B \$4.50
C \$7.50
D \$8.00

4. Which percent is equivalent to $\frac{3}{20}$?

A 3%
B 5%
C 15%
D 30%

Use the table below to answer question 5.

DIMENSIONS OF A SQUARE

Side Length (inches)	Area (square inches)
$\frac{1}{2}$	$\frac{1}{4}$
$\frac{1}{3}$	$\frac{1}{9}$
$\frac{1}{4}$	$\frac{1}{16}$
$\frac{1}{5}$?

5. What is the area of a square with sides $\frac{1}{5}$ inch long?

A $\frac{1}{25}$
B $\frac{1}{23}$
C $\frac{1}{16}$
D $\frac{1}{10}$

6. Ron wants to buy a new stereo that costs \$190. The sales tax is 6.5%. How much will Ron pay for this stereo, including tax?

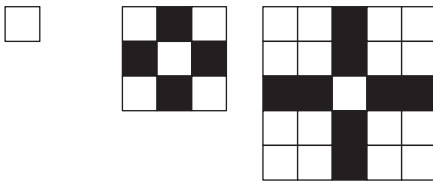
A \$177.65
B \$196.50
C \$202.35
D \$313.50

7. Carlos bought a water bottle that was 20% off. After taking 20% off the original price of the water bottle, the cost was \$11.96. What was the original price of the water bottle?

A \$2.39
 B \$13.96
 C \$14.35
 D \$14.95

8. Giselle made the designs below using black square tiles and white square tiles.

Design 1 Design 2 Design 3



If Giselle uses d to represent the design number, and t to represent the number of black tiles, which formula could she use to represent the number of black tiles in any design?

A $d = t$
 B $d = 4t$
 C $t = 4 + d$
 D $t = 4(d - 1)$

9. Which fraction is equivalent to $66\frac{2}{3}\%$?

A $\frac{1}{3}$
 B $\frac{2}{3}$
 C $6\frac{1}{3}$
 D $6\frac{2}{3}$

10. Clarissa has a coupon for 5% off her total shoe purchase. How much would she save by using the coupon, if the shoes she wants to buy cost \$62.00?

A \$3.10
 B \$6.20
 C \$12.40
 D \$58.90

11. Marcus went to a music store that was having a 25%-off sale. What will be the sale price of a CD that originally cost \$18?

A \$4.50
 B \$13.50
 C \$15.50
 D \$22.50

12. Which number is 35% of 80?

A 28
 B 35
 C 36
 D 45

- 13.** Paint at a hardware store costs \$28 per gallon. About how much does 3.5 gallons cost?

- A \$70
- B \$75
- C \$90
- D \$105

- 14.** Jamal must complete the table below for homework. He needs to calculate different percents of the number 120.

Percent of 120	80%	40%	20%	10%
Value	96	48	?	?

Which numbers could Jamal use to complete the table?

- A 0.2, 0.1
- B 2, 1
- C 12, 6
- D 24, 12

- 15.** A clothing store was selling clothing for 40% off. The chart below shows the store's regular prices.

CLOTHING PRICES

Piece of Clothing	Regular Price
Jeans	\$30
Socks	\$6
Sweater	\$28
T-Shirt	\$13

If Jenell bought a T-shirt and a sweater, what was the sale price of her total purchase?

- A \$16.40
- B \$21.60
- C \$24.60
- D \$41.00

- 16.** The population of Juanita's town was 25,650 in 2005. In 2006, the population was 28,215. What was the percent of increase in the town's population between the years 2005 and 2006?

- A 9%
- B 10%
- C 90%
- D 91%

17. Which percent is equivalent to $\frac{27}{100}$?

- A 0.27%
- B 2.7%
- C 27%
- D 270%

18. At a restaurant, Jeremy purchased a sandwich that cost \$4.89, a side salad that cost \$3.49, and a drink that cost \$2.09. If the total cost of his meal, including tax, was \$10.89, what was the approximate percent of sales tax?

- A 0.04%
- B 0.40%
- C 1.04%
- D 4.00%

19. Which of the following represents three equivalent values?

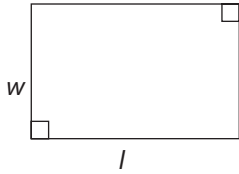
- A 5%, 0.05, $\frac{1}{20}$
- B 8%, 0.80, $\frac{1}{8}$
- C 12%, 1.20, $\frac{3}{25}$
- D 35%, 0.35, $\frac{11}{20}$

20. Colleen had a yard sale to sell her old picture frames. After the sale was over, she still had $\frac{7}{10}$ of her picture frames left. What percent of her picture frames did she sell?

- A 3%
- B 7%
- C 30%
- D 70%

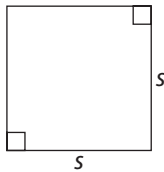
Mathematics Reference Sheet

You may use the calculator π or the number 3.14.

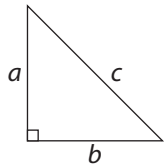


$$P = 2l + 2w$$

$$A = lw$$

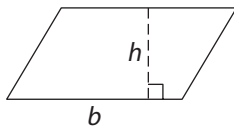


$$A = s \cdot s$$

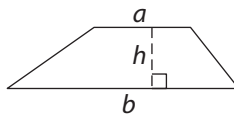


Pythagorean
Theorem:

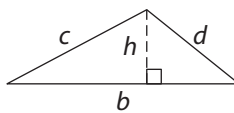
$$a^2 + b^2 = c^2$$



$$A = bh$$

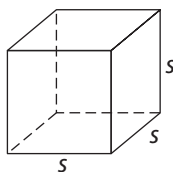


$$A = \frac{1}{2}h(a + b)$$



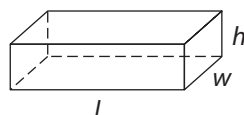
$$P = b + c + d$$

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



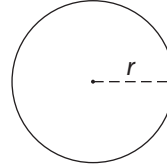
$$SA = 6s^2$$

$$V = s \cdot s \cdot s$$



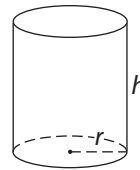
$$SA = 2lw + 2lh + 2wh$$

$$V = lwh$$

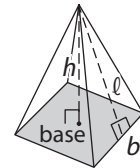


$$C = 2\pi r$$

$$A = \pi r^2$$



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



$$V = \frac{1}{3}(\text{Area of the base}) \times h$$

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

Customary Conversions:

- 1 yard (yd) = 3 feet
- 1 foot = 12 inches (in.)
- 1 pound = 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)



This is the end of the test.

**You may go back to check your work
or answer questions you did not complete.**

**Answer Key
Grade 7 Math Benchmark 2**

Item Number	Correct Answer	Performance Content Descriptor Measured	Eligible Content Measured
1	B	2.2.7.A.2	M7.A.2.1.1
2	C	2.2.7.A.2	M7.A.2.1.1
3	A	2.2.7.E.1	M7.A.3.1.1
4	C	2.1.7.A.1	M7.A.1.1.1
5	A	2.8.7.A.1	M7.D.1.1.1
6	C	2.1.7.D.6	M7.A.2.2.5
7	D	2.1.7.D.6	M7.A.2.2.5
8	D	2.8.7.A.1	M7.D.1.1.1
9	B	2.1.7.A.1	M7.A.1.1.1
10	A	2.1.7.D.1	M7.A.1.1.1
11	B	2.2.7.B.1	M7.A.3.2.1
12	A	2.1.7.A.1	M7.A.1.1.1
13	D	2.2.7.E.1	M7.A.3.1.1
14	D	2.1.7.D.1	M7.A.3.2.1
15	C	2.2.7.B.1	M7.A.3.2.1
16	B	2.1.7.D.4	M7.A.2.2.5
17	C	2.1.7.A.1	M7.A.1.1.1
18	D	2.1.7.D.6	M7.A.2.2.5
19	A	2.1.7.A.1	M7.A.1.1.1
20	C	2.1.7.A.1	M7.A.1.1.1