

# Minnesota MCA Grade 6 Math Practice

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## Grade 6 Formula Sheet

You may use the following formulas to solve problems on this test.

Formulas	Variables
$A = bh$ $A = \frac{1}{2}bh$ $A = \frac{1}{2}h(b_1 + b_2)$	$A$ = area $b$ = base $h$ = height
$V = Bh$	$B$ = area of base $h$ = height $V$ = volume
$s = 180(n - 2)$	$n$ = number of sides $s$ = sum of angles

Name \_\_\_\_\_

# Minnesota Comprehensive Assessments-Series III

Mathematics Item Sampler  
Grade 6



**ITEM SAMPLERS ARE NOT SECURE TEST MATERIALS. THIS ITEM  
SAMPLER TEST BOOK MAY BE COPIED OR DUPLICATED.**

# Mathematics Test — Segment 1



1

1. Which is equivalent to  $4^3$ ?

- A. 12
- B. 48
- C. 64
- D. 81

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2. Divide.

$$1\frac{1}{10} \div 1\frac{1}{5}$$

- A.  $\frac{11}{12}$
- B.  $\frac{25}{33}$
- C.  $1\frac{8}{25}$
- D.  $1\frac{1}{2}$



**3.** Riley has 200 stamps.

- 35% are from Europe.
- 10% are from Asia.
- 20% are from Australia.

The rest of the stamps are from North America. How many of Riley's stamps are from North America?

- A.** 35
  - B.** 65
  - C.** 70
  - D.** 130
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**4.** What is the prime factorization of 630?

- A.**  $2 \times 3 \times 5 \times 7$
- B.**  $2 \times 3^2 \times 5 \times 7$
- C.**  $2 \times 3^2 \times 35$
- D.**  $2 \times 5 \times 7 \times 9$



1

5. An equation is shown.

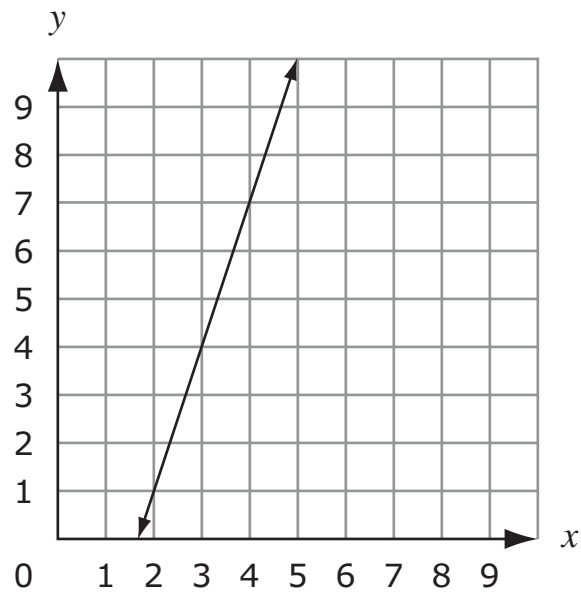
$$j = 7k + 5$$

When the value of  $k$  increases by 2, by what amount does the value of  $j$  increase?

- A. 2
- B. 9
- C. 12
- D. 14



6. A graph is shown.



What is the equation of the line on the graph?

- A.  $y = x - 1$
- B.  $y = x + 3$
- C.  $y = 3x + 1$
- D.  $y = 3x - 5$



1

7. Simplify.

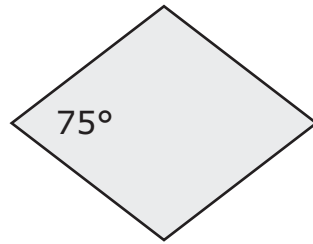
$$4\left(\frac{1}{2} + \frac{3}{8}\right) - \frac{5}{8} \cdot 2$$

- A.  $1\frac{1}{8}$
- B. 2
- C.  $2\frac{1}{4}$
- D.  $5\frac{3}{4}$

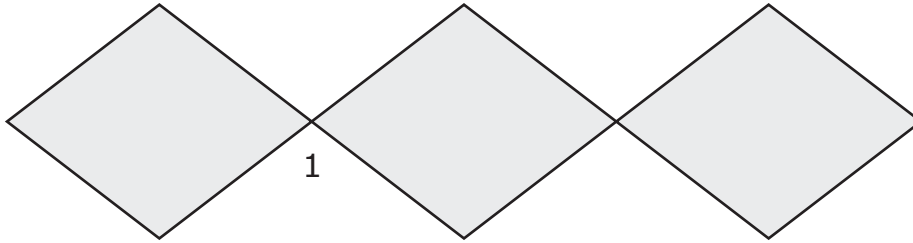




8. A rhombus is shown.



The rhombus is used to make a design.



What is  $m\angle 1$ ?

- A.  $15^\circ$
- B.  $75^\circ$
- C.  $105^\circ$
- D.  $150^\circ$



## Mathematics Test — Segment 2

2

9. Which statement is true?

A.  $\frac{1}{6} = 0.16$

B.  $0.08 = \frac{4}{5}$

C.  $0.25 < \frac{1}{4}$

D.  $\frac{1}{3} > 0.3$

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10. Kelly makes 12 candles in 3 hours. Lee makes 6 candles in 1 hour. What is the difference in the numbers of candles they each make in 8 hours?

A. 2

B. 8

C. 16

D. 48

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11. A bottle of soap costs \$3.45 for 64 ounces. What is the cost per ounce?

A. \$0.05

B. \$0.19

C. \$0.22

D. \$0.64

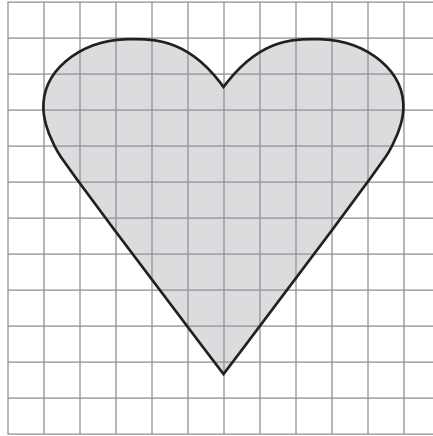


- 12.** A company is printing 250 calendars. In 1 hour, 75 calendars are printed. What percent of the calendars are printed in 1 hour?
- A.** 3%
  - B.** 3.3%
  - C.** 30%
  - D.** 33%
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- 13.** The surface area of a cube is 384 square inches. What is the volume of the cube?
- A.** 8 cubic inches
  - B.** 16 cubic inches
  - C.** 256 cubic inches
  - D.** 512 cubic inches



- 14.** A heart shape is cut from a gridded piece of paper.



2

What is the approximate area of the heart?

- A.** 50 square units
- B.** 70 square units
- C.** 90 square units
- D.** 144 square units

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- 15.** Joleen bought 12 apples. Each apple weighed 1.8 ounces. How many pounds of apples did Joleen buy?

- A.** 1.35 pounds
- B.** 2.4 pounds
- C.** 21.6 pounds
- D.** 28.8 pounds



Please write your answer in the space below the question. You may use the digits: 0–9 and the symbols: slash for a fraction bar (/) and a decimal (.). If your answer is a mixed number, you must change it to an improper fraction or a decimal.

16. Eli has a cube with sides numbered 1–6 and a spinner with 3 equal sections labeled A, B, and C. He rolls the cube and spins the spinner. How many outcomes are possible?

17. Four students each flipped a coin 50 times and recorded the results in the table.

Student	Heads	Tails
Mai Ka	31	19
Heather	15	35
Jose	21	29
Tyrone	20	30

Who had a relative frequency of  $\frac{3}{5}$  of flipping tails?

- A. Mai Ka
- B. Heather
- C. Jose
- D. Tyrone



**18.** Which is equivalent to 1.4%?

- A.**  $\frac{1}{80}$
- B.**  $\frac{7}{500}$
- C.**  $1\frac{1}{4}$
- D.**  $1\frac{4}{10}$

2

**19.** What is the greatest common factor of 48 and 64?

- A.** 2
- B.** 8
- C.** 16
- D.** 24

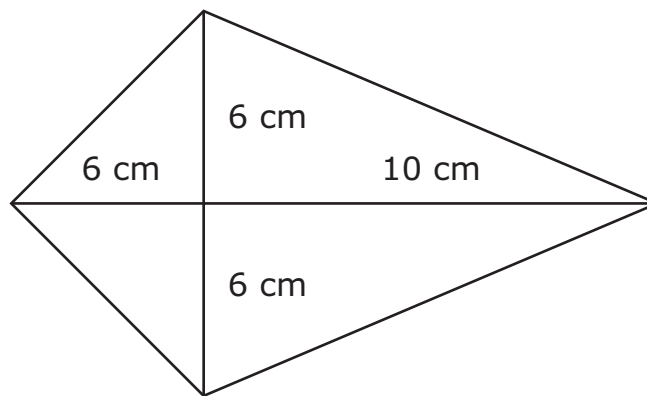
**20.** A paint color is made using 4 drops of red and 5 drops of blue for each 5 gallons of paint. How many gallons of paint are being colored when 45 drops of color are used?

- A.** 9
- B.** 25
- C.** 45
- D.** 81



- 21.** A phone company uses the equation  $y = 0.15x + 10$  to find  $y$ , the monthly charge for a customer sending  $x$  text messages. How many text messages are sent if the monthly charge is \$77.50?
- A.** 10  
**B.** 21  
**C.** 450  
**D.** 506

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- 22.** A scale drawing of a kite is shown.

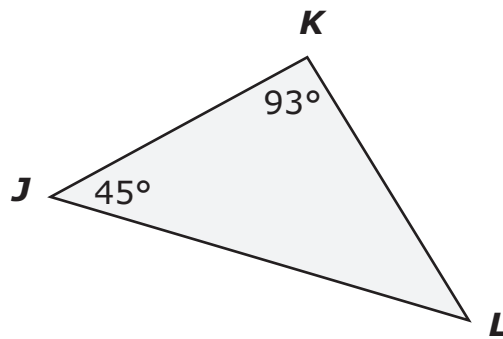


What is the area of the kite?

- A.**  $28 \text{ cm}^2$   
**B.**  $60 \text{ cm}^2$   
**C.**  $96 \text{ cm}^2$   
**D.**  $192 \text{ cm}^2$



**23.** A triangle is shown.



What is  $m\angle L$ ?

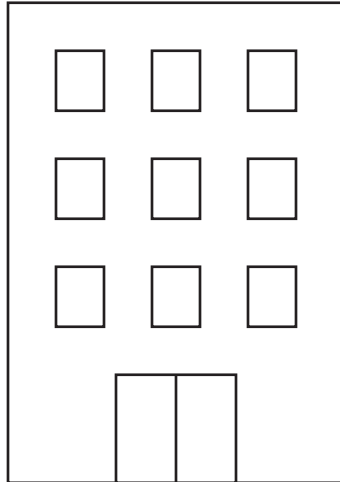
- A.**  $42^\circ$
- B.**  $45^\circ$
- C.**  $48^\circ$
- D.**  $138^\circ$

2





- 24.** A building has 9 windows. Each window is 5 feet tall.



About how tall is the building?

- A.** 15 feet
  - B.** 25 feet
  - C.** 40 feet
  - D.** 45 feet
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- 25.** Tyler has a stack of cards. He picks a card, records the color, and returns the card to the stack. He repeats this 60 times and chooses a red card 24 times. What is the experimental probability of choosing a red card from the stack?
- A.** 0.14
  - B.** 0.23
  - C.** 0.40
  - D.** 2.50