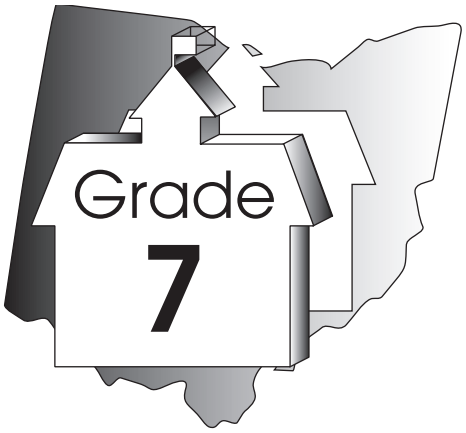
Student Name: _____

Ohio Achievement Tests



Mathematics

Student Test Booklet

Half-Length Practice Tests

Copyright © 2005 by Ohio Department of Education. All rights reserved.

The Ohio Department of Education does not discriminate on the basis of race, color, national origin, sex, religion, age, or disability in employment or the provision of services.

Directions:

Today you will be taking the Ohio Grade 7 Mathematics Practice Test. Three different types of questions appear on this test: multiple choice, short answer and extended response.

There are several important things to remember:

1. Read each question carefully. Think about what is being asked. Look carefully at graphs or diagrams because they will help you understand the question.

2. You may use the blank areas of your Student Test Booklet to solve problems.

3. For short-answer and extended-response questions, write your answers neatly and clearly in the space provided in the answer document. Any answers you write in the Student Test Booklet will not be scored.

4. Short-answer questions are worth two points. Extended-response questions are worth four points. Point values are printed near each question in your Student Test Booklet. The amount of space provided for your answers is the same for two- and four-point questions.

5. For multiple-choice questions, shade in the circle next to your choice in the answer document for the test question. Mark only one choice for each question. Darken completely the circles on the answer document. If you change an answer, make sure that you erase your old answer completely.

6. Do not spend too much time on one question. Go on to the next question and return to the question skipped after answering the remaining questions.

7. Check over your work when you are finished.

M Mathematics

1. Teri is simplifying the expression $6 - 2(3 + 5)^2$.

   Which computation should Teri do first?

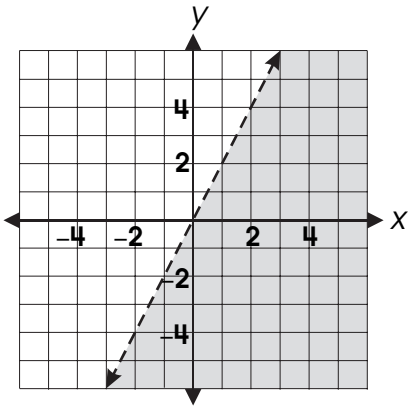
   A. subtract 2 from 6

   B. multiply 2 by 3

   C. add 3 and 5

   D. multiply 5 times 5

2. The graph of $y < 2x$ is shown.



   Which ordered pair is a solution to this inequality?

   A. (–2, 4)

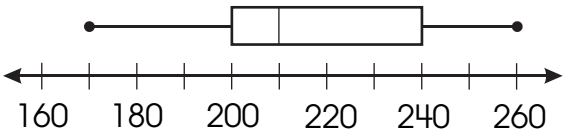
   B. (0, –2)

   C. (1, 2)

   D. (1, 4)

3. The box-and-whisker plot shown represents the weights, in pounds, of players on a football team.

Players' Weights



What is the median weight of the football players?

A. 200 pounds

B. 210 pounds

C. 220 pounds

D. 240 pounds

4. Tasha needs to measure 1.4 liters of liquid for an experiment.

How many milliliters of liquid will Tasha need?

A. 14 mL

B. 140 mL

C. 1,400 mL

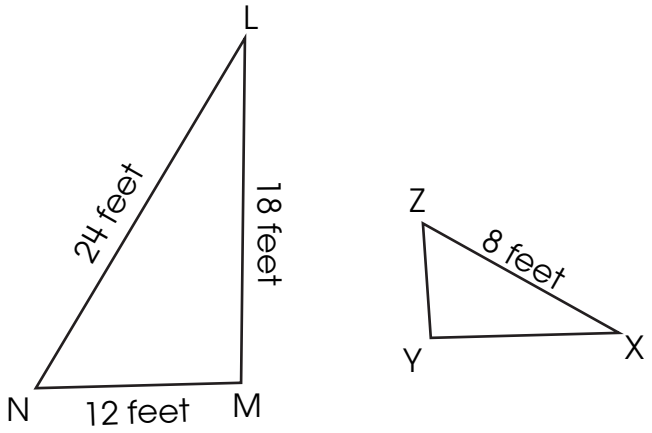
D. 14,000 mL

5. Joyce claims that 8 + (–2) is the same as 8 – 2.

In your **Answer Document**, explain or show whether Joyce's reasoning is correct and justify your response using pictures or words.

For question 5, respond completely in your **Answer Document**. (2 points)

6. Triangle LMN is similar to triangle XYZ.



What is the length of $\overline{YX}$?

A. 2 feet

B. 3 feet

C. 4 feet

D. 6 feet

7. The table shows the total balance in four people's savings accounts at the end of each month.

Account Balance ($)

Person	Jan	Feb	Mar	Apr	May	Jun
Julie	50	65	80	105	120	135
Stuart	70	80	90	100	110	120
Sarah	100	120	140	160	180	220
Michael	90	100	110	130	150	180

In which person's account did the balance show a constant rate of increase over the six-month period?

A. Julie

B. Stuart

C. Sarah

D. Michael

8. The drama teacher is making costumes for the school play. Each costume requires $1\frac{3}{4}$ yards of material and $\frac{2}{3}$ of a yard of ribbon. The material costs \$2.99 per yard and the ribbon costs 59¢ per yard.

   What is the approximate cost of each costume?

   A. \$2.40

   B. \$5.65

   C. \$9.00

   D. \$10.80

9. Two number cubes, each with sides numbered 1 through 6, are rolled at the same time.

   What is the probability of rolling a number greater than 4 on both number cubes?

   A. $\frac{1}{36}$

   B. $\frac{1}{9}$

   C. $\frac{1}{3}$

   D. $\frac{2}{3}$

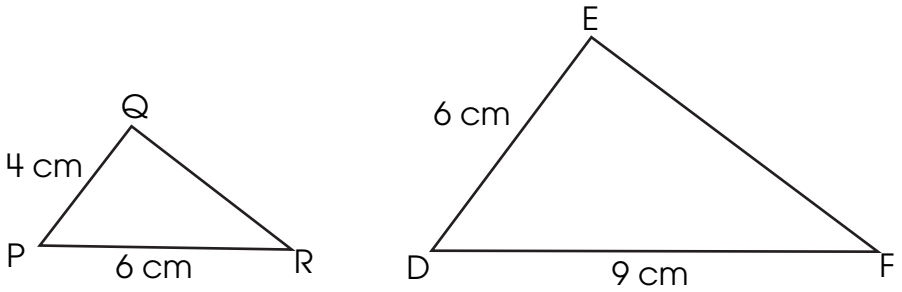
10. During her summer vacation, Rachel mows lawns. Her lawn mower cuts a path 2 feet wide, and she moves forward at an average speed of 180 feet per minute. Rachel is mowing a rectangular section of lawn that measures 120 feet long and 80 feet wide.

    In your **Answer Document**, make a reasonable estimate for how long it will take her to mow this section of lawn. Draw a sketch of the lawn to explain how you made your estimate.

    Rachel started mowing the lawn at 3:00 p.m. After 10 minutes of mowing she increased her speed to 200 feet per minute. Approximately what time will Rachel finish mowing the lawn? Show your work or explain your answer.

For question 10, respond completely in your **Answer Document**. (4 points)

11. Triangle PQR is similar to triangle DEF as shown.



Which describes the relationship between the corresponding sides of the two triangles?

A. $\frac{PQ}{DE} = \frac{4}{6}$

B. $\frac{PQ}{DE} = \frac{6}{4}$

C. $\frac{PQ}{EF} = \frac{4}{9}$

D. $\frac{PR}{DE} = \frac{6}{6}$

12. The Amazon basin has received 23 inches of rain so far this year. This amount is 25% of the average yearly rainfall.

    What is the average yearly rainfall in the Amazon basin?

    A. 46 inches

    B. 48 inches

    C. 69 inches

    D. 92 inches

13. Kendra put the numbered tiles in a bag.

11	5	8	4	15	6	7	3	19	2

    She selects one tile at random and replaces it.

    If she makes 100 selections, what is a reasonable prediction of the number of tiles with a two-digit number she will select?

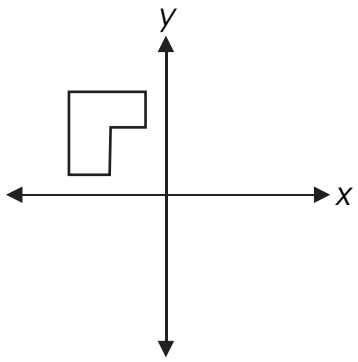
    A. 10

    B. 20

    C. 30

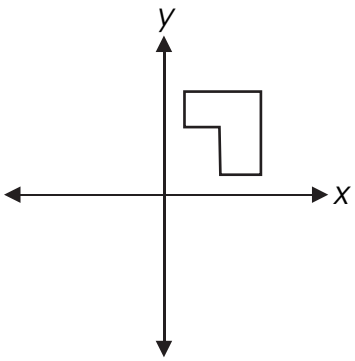
    D. 40

14. Yolanda drew this figure on a coordinate plane.

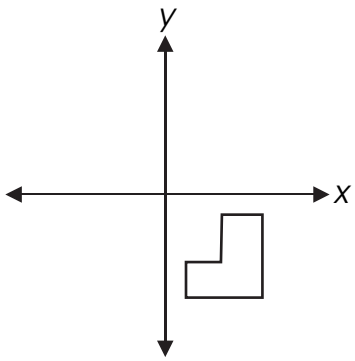


Which graph shows this figure reflected across the *x*-axis?

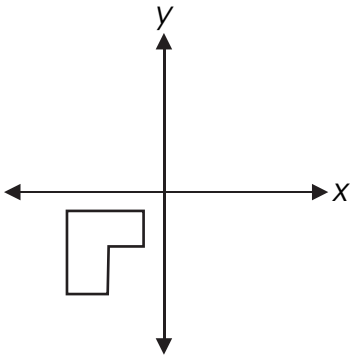
A.



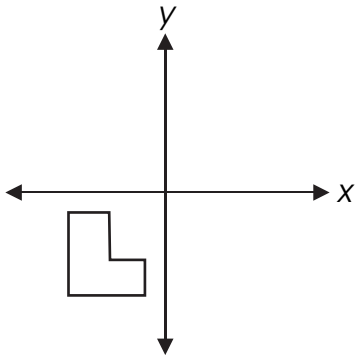
B.



C.



D.



15. An input/output table is shown.

Input	Output
1	2
2	5
3	10
4	17
5	?

In your **Answer Document**, describe the rule that relates the output to the input. Then use your rule to find the output for an input value of 5.

For question 15, respond completely in your **Answer Document**. (2 points)

16. Which expression is equivalent to $4 \bullet c \bullet c + 5 + c$?

A. $7c + 5$

B. $9c + c^2$

C. $20 + c^2 + c$

D. $4c^2 + c + 5$

17. The base of a cylinder has a radius of 5 inches.

What additional measurement is needed to find the volume of this cylinder?

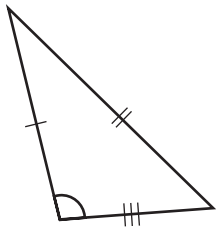
A. circumference

B. diameter

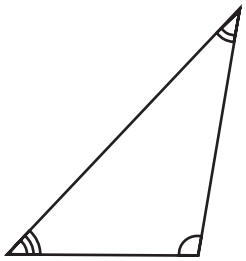
C. height

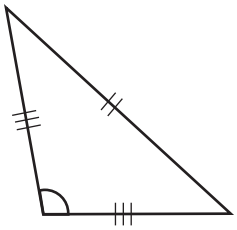
D. weight

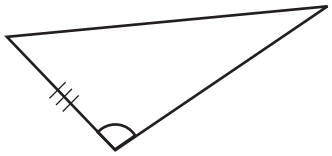
18. A triangle is shown.

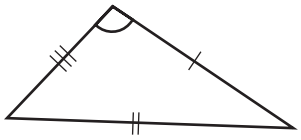


Which triangle is congruent to this triangle?

A. 

B. 

C. 

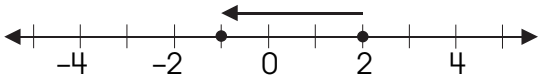
D. 

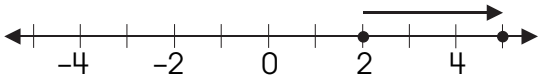
19. The nine employees of the Ellington Dance Studio each earn $600 per week. A new employee is hired who earns $1500 per week.

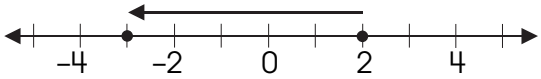
    In your **Answer Document**, describe how the new employee's earnings will affect the mean and median earnings of Ellington Studio's employees. Use mathematics to support your answer.

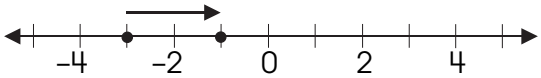
For question 19, respond completely in your **Answer Document**. (2 points)

20. Which number line models 2 – (–3)?

A.


B.


C.


D.


21. Nadia draws a triangle with a right angle and at least two congruent sides. She claims that her triangle is equilateral.

    Why is Nadia's triangle **not** equilateral?

    A. Equilateral triangles have 60° angles.

    B. Equilateral triangles have no congruent sides.

    C. Equilateral triangles have two 90° angles.

    D. Equilateral triangles have 60-inch sides.

STOP