Math 8
Unit 1: Square Roots and Pythagorean Theorem
PRACTICE Exam

Part A: Multiple Choice and Numerical Response [1 mark each = 10 marks]
Identify the choice that best completes the statement or answers the question.

1. Find the number **whose square root is** 49.
    a. 7
    b. 12
    c. 2401
    d. 196

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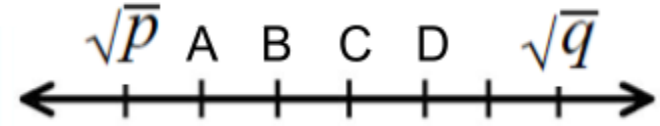
2. Find $\sqrt{16 \times 16}$
    a. 16
    b. 4
    c. 256
    d. None of the above

NUMERICAL RESPONSE

1. The area of a square is 225 m^2, what is the **perimeter**?

    Answer: _____ m

Use the following information to answer question 3.



3. Which of the following points on the number lines **best** represents the value of $\sqrt{\frac{p+q}{2}}$?
    a. A
    b. B
    c. C
    d. D

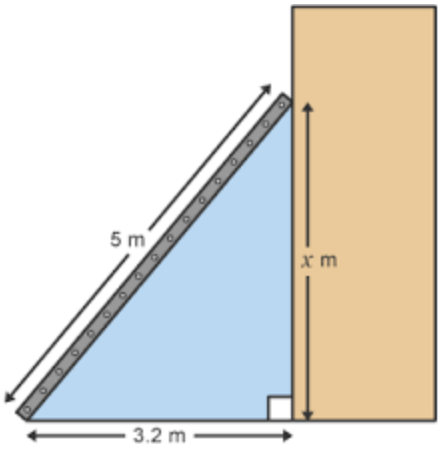
NUMERICAL RESPONSE

2. What is the value of 23^2?

    Answer: _____

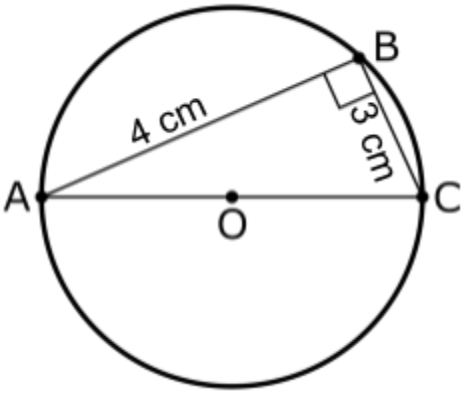
Use the following information to answer question 4.

A 5 m ladder is leaned against a wall. It is 3.2 m from the base of the building.



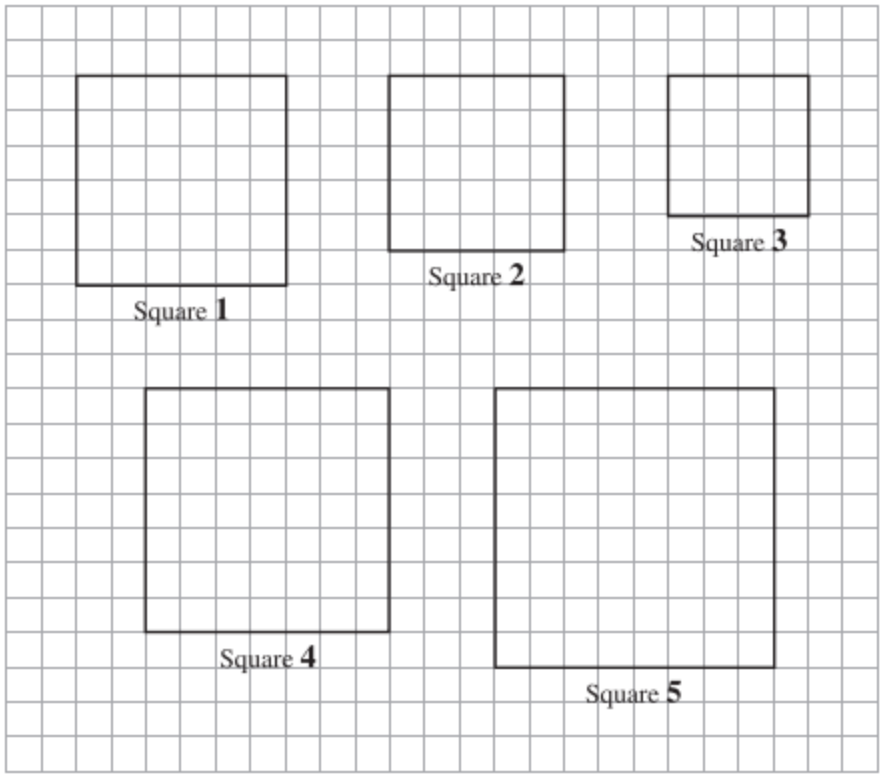
4. How high up the wall does the ladder reach, round to the nearest tenth of a meter if necessary?
    a. 3.8 m
    b. 5.9 m
    c. 35.24 m
    d. 14.76 m

Use the following information to answer question 5.



5. What is the area of the circle, to the nearest square centimeter?
    a. 5 cm^2
    b. 3 cm^2
    c. 10 cm^2
    d. 20 cm^2

Use the following information to answer numerical-response 4.



NUMERICAL RESPONSE

3. Which two squares shown above represent the **best** benchmarks for estimating the value of $\sqrt{26}$?

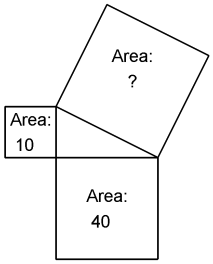
Answer: Square _____ and Square _____

NUMERICAL RESPONSE

4. A right triangle has two legs with measurements 8 cm and 115 cm. What is the length of the hypotenuse?

Answer: _____ cm

Use the following information to answer question 6.



6. The **area** of the indicated square is
    a. 50 square units
    b. 30 square units
    c. 400 square units
    d. 7.1 square units

Math 8

Integers Unit Exam

Answer Booklet

Name: _____

Part A – Multiple Choice & Numerical Response:

Multiple Choice:

Choose the BEST response from those available and WRITE THE CAPITAL LETTER OF THE CORRECT ANSWER IN THE SPACE PROVIDED.

1		2		3		4	
5		6		7		8	
9		10					

Numerical Response:

For each question, calculate a value, and then WRITE THE CORRECT response in the spaces provided from the left box to the right box.

1				
2				
3				
4				

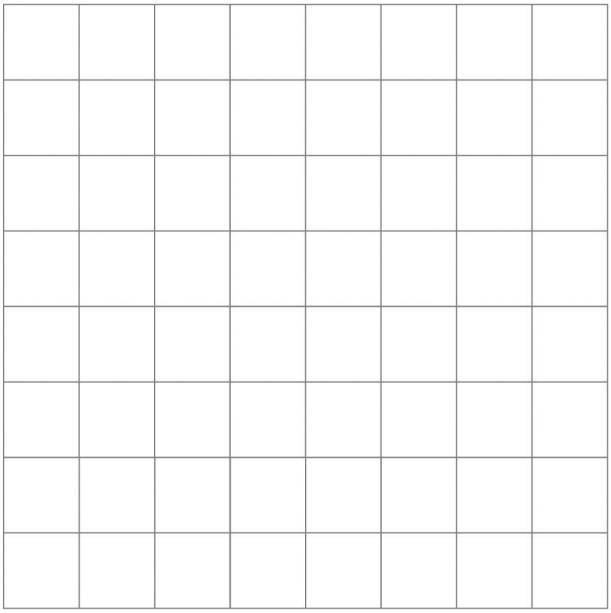
Part C: Written Response

Show all of your work. You will not be awarded full marks if your work is not shown. Write all answers for word problems in a sentence. Use correct units on all answers.

1. Use a **<u>diagram</u>** to explain why 36 is a perfect square. [2 marks]

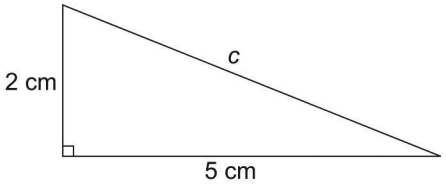
2. A number has 14 factors. Is the number a perfect square? Explain. [2 marks]

3. On the grid below, draw a line segment with length $\sqrt{50}$cm. Explain how you did it. [3 marks]

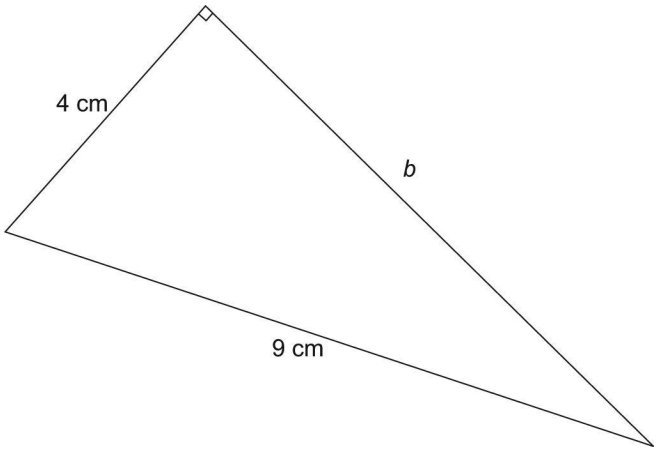


4. Find the length of the indicated side in each triangle. **All work must be shown to receive full marks.** [3 marks each = 6 marks]

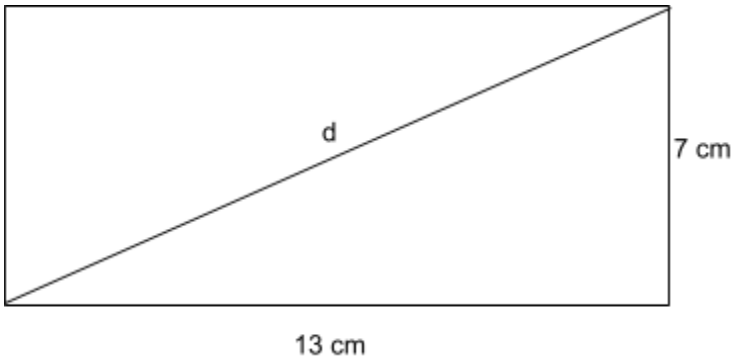
a.



b.



5. Find the length of the diagonal, d, in this rectangle. [3 marks]



6. Simplify. [1 mark each = 3 marks]

a. 19^2 _____ b. $\sqrt{625}$ _____ c. $\sqrt{32^2}$ _____

7. Is each statement true or false. **Explain.** [1 mark each = 4 marks]

a. $\sqrt{54}$is between 49 and 64

b. $\sqrt{7} \times \sqrt{7} = 7$

c. $\sqrt{49} = 7 \times 7$

d. 7, 14, $\sqrt{245}$ is a Pythagorean triple.

8. Determine whether a triangle with each set of side lengths is a right triangle. Justify your answers, by showing all of your work. [3 marks each = 6 marks]

a. 6 cm, 6 cm, and 10 cm

b. 6 cm, 13 cm, and $\sqrt{232}$