

- 1 What is the value of the expression below?

$$4|3 - 5|$$

- A. -32
- B. -8
- C. 8
- D. 32

Mark your answer here: 1. Ⓐ Ⓑ Ⓒ Ⓓ

- 2 Laura correctly used a property of real numbers to calculate the exact value of the product shown below.

$$(840)(998)$$

Which of the following demonstrates a property that Laura could have used?

- A. $(838)(1000)$
- B. $(838)(1000) + 2$
- C. $(840)(1000) - (840)(2)$
- D. $(840)(1000) - (2)(1000)$

Mark your answer here: 2. Ⓐ Ⓑ Ⓒ Ⓓ

- 3 If the distributive property is used to simplify the expression below, what is the result?

$$3(c + d) + 2(ef)$$

- A. $3c + 3d + 2(ef)$
B. $3(c + d) + 2e \cdot 2f$
C. $3(c + d) + 2fe$
D. $3c + 3d + 2e + 2f$

Mark your answer here: 3. (A)(B)(C)(D)

- 4 What is the value of the expression below?

$$\frac{(3^4 - 3^2)}{9}$$

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

Mark your answer here: 4. (A)(B)(C)(D)

5

What is the value of the expression below?

$$5^2 + 3^3$$

- A. 52
- B. 47
- C. 34
- D. 19

Mark your answer here: 5. (A)(B)(C)(D)

6

Ellen works in the Hancock Building delivering parcels. She began her morning deliveries by riding the elevator down 9 floors, up 11 floors, up 5 floors, then down 10 floors where she got off on the 24th floor to take her break. On what floor did Ellen get on the elevator to begin her deliveries?

Write your answer here:

Directions: For the problem below, use a separate piece of paper to write your answers. Your teacher will not count anything you write on this page.

7

Suppose that a new operation is defined for all real numbers. The rule for the new operation is given below.

$$a \blacklozenge b = a^2b^2 + a + b$$

For example: $3 \blacklozenge 5 = (3^2 \cdot 5^2) + 3 + 5$
 $= 233$

- a. What is the value of $4 \blacklozenge 3$? Show your work.
- b. What is the value of $\frac{2}{3} \blacklozenge \frac{3}{2}$? Show your work.
- c. If c is any real number, prove that $c \blacklozenge 0 = c$.
- d. If w and t are any real numbers, prove that $w \blacklozenge t = t \blacklozenge w$.