

ACT Practice Items

Question 1

Which of the following expressions is equivalent to $b(5 - b) - 2(b + 8)$?

- A. $-2b - 16$
- B. $-2b + 8$
- C. $-b^2 + 3b - 16$
- D. $-b^2 + 3b + 8$
- E. $-2b^2 - 16$

Answer Explanation

The answer is C. Start by distributing both the b and the -2 to their respective parenthesis to get $5b - b^2 - 2b - 16$. Combine like terms and reorder terms by highest degree to end with the value in answer choice C.

Question 2

A bag contains 20 different colored marbles: 7 red, 8 blue, and 5 green. One marble will be randomly selected from the bag. What is the probability the marble picked is NOT blue?

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

Answer Explanation

The answer is D. The marbles that are not blue are red and green for a quantity of 12 out of 20 marbles. The probability $\frac{12}{20}$ can be reduced to $\frac{3}{5}$.

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Question 3

The function g is defined as $g(x) = -3x^3 + 3x$. What is $g(-3)$?

- A. -90
- B. -72
- C. 9
- D. 72
- E. 90

Answer Explanation

The answer is D. Substitute -3 in for x in the function to get
 $g(-3) = -3(-3)^3 + 3(-3) = -3(-27) - 9 = 81 - 9 = 72$.

Question 4

30% of 280 is equal to 70% of what number?

- A. 364
- B. 300
- C. 196
- D. 154
- E. 120

Answer Explanation

The answer is E. 30% of 280 is 84. Students can set up a proportion $\frac{84}{x} = \frac{70}{100}$ then cross multiply to solve for the value. The result is 120.

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Question 5

When $(4x + 2)^2$ is written in the form $ax^2 + bx + c$, where a , b , and c are integers, $a + b + c = ?$

- A. -16
- B. -2
- C. 6
- D. 12
- E. 36

Answer Explanation

The answer is E. When the binomial is multiplied, the result is $16x^2 + 16x + 4$. The value of $a = 16$, $b = 16$, and $c = 4$, thus $a + b + c = 36$.

Question 6

If $6(x - 6) = -25$, then $x = ?$

- A. $-\frac{61}{6}$
- B. $-\frac{31}{6}$
- C. $-\frac{25}{6}$
- D. $\frac{11}{6}$
- E. $\frac{19}{6}$

Answer Explanation

The answer is D. First distribute the 6 to the x and -6 . The result is $6x - 36 = -25$. Add 36 to both sides and divide by 6. The result is $x = \frac{11}{6}$.

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Question 7

Jane is bowling in a tournament and has the highest average after 5 games, with scores of 220, 225, 264, 241, and 280. In order to maintain this exact average, what must be Jane's score for her 6th game?

- A. 210
- B. 241
- C. 246
- D. 250
- E. 265

Answer Explanation

The answer is C. To find the average of the original scores, calculate the sum then divide by 5.

$\frac{220+225+264+241+280}{5} = \frac{1230}{5} = 246$. In order for Jane to maintain the exact average after a sixth game, she needs to bowl a score that matches the average of the first five games, therefore she needs to bowl a 246 in the last game.

Question 8

In the school cafeteria, students choose their lunch from 4 sandwiches, 2 soups, 2 salads, and 5 drinks. How many different lunches are possible for a student who chooses exactly 1 sandwich, 1 soup, 1 salad, and 1 drink?

- A. 5
- B. 8
- C. 16
- D. 40
- E. 80

Answer Explanation

The answer is E. Using the fundamental counting principle, multiply the number of options for each category.
 $4 \times 2 \times 2 \times 5 = 80$ possible combinations.

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Question 9

$(2a + 3b - c) - (-3a + b + 2c)$ is equivalent to:

- A. $-a + 2b - 3c$
- B. $-a + 4b - 3c$
- C. $5a + 2b - 3c$
- D. $5a + 4b - 3c$
- E. $5a + 2b + c$

Answer Explanation

The correct answer is C. After distributing the negative sign to the second set of parentheses, the result is $2a + 3b - c + 3a - b - 2c$. Combining like terms results in $5a + 2b - 3c$.

Question 10

The median of the following data set is 6. Which of the following is a possible value of x ?

$x, 6, 1, 11, 7$

- A. 6
- B. 7
- C. 8
- D. 10
- E. 12

Answer Explanation

The answer is A. In the number set, 6 has to be the middle term which allows two numbers before and two numbers after. 7 and 11 already fall after the median which means that the value of $x \leq 6$.