

A.N.6: Evaluating Expressions 2: Evaluate expressions involving factorial(s), absolute value(s), and exponential expression(s)

- 1 If $t = -3$, then $3t^2 + 5t + 6$ equals
- 2 What is the value of the expression $2x^3y$ when $x = -2$ and $y = 3$?
- 3 If $a = 3$ and $b = -1$, what is the value of $ab - b^2$?
- 4 If $x = -4$ and $y = 3$, what is the value of $x - 3y^2$?
- 5 What is the value of the expression $-3x^2y + 4x$ when $x = -4$ and $y = 2$?
 - 1) -112
 - 2) -80
 - 3) 80
 - 4) 272
- 6 If $x = 2$ and $y = -3$, what is the value of $2x^2 - 3xy - 2y^2$?
- 7 What is the value of the expression $(a^3 + b^0)^2$ when $a = -2$ and $b = 4$?
- 8 If $x = 4$ and $y = -2$, the value of $\frac{1}{2}xy^2$ is
- 9 What is the value of $\frac{x^2 - 4y}{2}$, if $x = 4$ and $y = -3$?
- 10 The expression $-|-7|$ is equivalent to
- 11 What is the value of the expression $|-5x + 12|$ when $x = 5$?
- 12 The value of the expression $-|a - b|$ when $a = 7$ and $b = -3$ is
- 13 If $r = 2$ and $s = -7$, what is the value of $|r| - |s|$?
- 14 The value of $5!$ is
- 15 An expression equivalent to $3!$ is
- 16 The value of $\frac{7!}{3!}$ is
- 17 What is the value of $\frac{8!}{4!}$?
- 18 If the expression $3 - 4^2 + \frac{6}{2}$ is evaluated, what would be done *last*?
- 19 What is the first step in simplifying the expression $(2 - 3 \times 4 + 5)^2$?
- 20 The height of a golf ball hit into the air is modeled by the equation $h = -16t^2 + 48t$, where h represents the height, in feet, and t represents the number of seconds that have passed since the ball was hit. What is the height of the ball after 2 seconds?
- 21 Brett was given the problem: "Evaluate $2x^2 + 5$ when $x = 3$." Brett wrote that the answer was 41. Was Brett correct? Explain your answer.

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Answer Section

1 ANS:

18

$$3(-3)^2 + 5(-3) + 6 = 3(9) - 15 + 6 = 27 - 15 + 6 = 12 + 6 = 18$$

REF: 010015a

2 ANS:

-48

$$2x^3y = 2(-2)^3(3) = -48$$

REF: 060807a

3 ANS:

-4

$$(3)(-1) - (-1)^2 = -3 - 1 = -4$$

REF: 060726a

4 ANS:

-31

$$-4 - 3(3)^2 = -4 - 3(9) = -4 - 27 = -31$$

REF: 080408a

5 ANS: 1

$$-3(-4)^2(2) + 4(-4) = -96 - 16 = -112$$

REF: 081113ia

6 ANS:

8

$$2(2)^2 - 3(2)(-3) - 2(-3)^2 = 8 + 18 - 18 = 8$$

REF: 010915a

7 ANS:

49

REF: 011110ia

8 ANS:

8

$$\frac{1}{2}(4)(-2)^2 = 2(4) = 8$$

REF: 080617a

9 ANS:

14

$$\frac{4^2 - 4(-3)}{2} = \frac{16 + 12}{2} = \frac{28}{2} = 14$$

REF: 010406a

10 ANS:

-7

$$-|-7| = -(+7) = -7$$

REF: 010518a

11 ANS:

13

$$|-5(5) + 12| = |-13| = 13$$

REF: 080923ia

12 ANS:

-10

$$-|a - b| = -|7 - (-3)| = -|-10| = -10$$

REF: 011010ia

13 ANS:

-5

$$|2| - |-7| = 2 - 7 = -5$$

REF: 060522a

14 ANS:

120

$$5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$$

REF: 080107a

15 ANS:

 $3 \cdot 2 \cdot 1$

REF: 060814a

16 ANS:

840

$$\frac{7!}{3!} = \frac{7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{3 \times 2 \times 1} = 840$$

REF: 080503a

17 ANS:

1,680

$$\frac{8!}{4!} = \frac{8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{4 \times 3 \times 2 \times 1} = 1,680$$

REF: 060605a

18 ANS:

adding

Using the acronym PEMDASLR indicates that addition and subtraction operations should be performed from left to right. Since the addition is to the right of the subtraction, the addition would be done last.

REF: 060314a

19 ANS:

multiply 3 by 4

Using the acronym PEMDASLR indicates that operations inside the expression's parentheses should be performed first. Multiplication precedes addition.

REF: 080612a

20 ANS:

32 ft

$$h = -16(2)^2 + 48(2) = -64 + 96 = 32$$

REF: 080508a

21 ANS:

No, the answer is 23. $2(3)^2 + 5 = 2(9) + 5 = 18 + 5 = 23$

REF: 060432a