

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

1. 060314a, P.I. A.N.6

If the expression $3 - 4^2 + \frac{6}{2}$ is evaluated,
what would be done *last*?

- [A] subtracting [B] squaring
[C] dividing [D] adding

2. 080612a, P.I. A.N.6

What is the first step in simplifying the
expression $(2 - 3 \times 4 + 5)^2$?

- [A] square 5 [B] add 4 and 5
[C] subtract 3 from 2 [D] multiply 3 by 4

3. 060432a, P.I. A.N.6

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.

4. 010015a, P.I. A.N.6

If $t = -3$, then $3t^2 + 5t + 6$ equals

- [A] -6 [B] 6 [C] 18 [D] -36

5. 080508a, P.I. A.N.6

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?

- [A] 16 ft [B] 80 ft [C] 32 ft [D] 64 ft

6. 080408a, P.I. A.N.6

If $x = -4$ and $y = 3$, what is the value of
 $x - 3y^2$?

- [A] -31 [B] -13 [C] -23 [D] -85

7. 060726a, P.I. A.N.6

If $a = 3$ and $b = -1$, what is the value of
 $ab - b^2$?

- [A] 2 [B] 4 [C] -4 [D] -2

8. 060807a, P.I. A.N.6

What is the value of the expression $2x^3y$
when $x = -2$ and $y = 3$?

- [A] -108 [B] -48 [C] 48 [D] -192

9. 010915a, P.I. A.N.6

If $x = 2$ and $y = -3$, what is the value of
 $2x^2 - 3xy - 2y^2$?

- [A] 16 [B] -20 [C] -2 [D] 8

10. 010406a, P.I. A.N.6

What is the value of $\frac{x^2 - 4y}{2}$, if $x = 4$ and

$$y = -3?$$

- [A] -2 [B] 14 [C] 2 [D] 10

11. 080617a, P.I. A.N.6

If $x = 4$ and $y = -2$, the value of $\frac{1}{2}xy^2$ is

- [A] -8 [B] 8 [C] 32 [D] -4

12. 010518a, P.I. A.N.6

The expression $-|-7|$ is equivalent to

- [A] 0 [B] -7 [C] 7 [D] 1

13. 080923ia, P.I. A.N.6

What is the value of the expression $|-5x + 12|$ when $x = 5$?

- [A] -13 [B] 37 [C] 13 [D] -37

14. 060522a, P.I. A.N.6

If $r = 2$ and $s = -7$, what is the value of

$$|r| - |s|?$$

- [A] 9 [B] -5 [C] 5 [D] -9

15. 080107a, P.I. A.N.6

The value of $5!$ is

- [A] 20 [B] 120 [C] $\frac{1}{5}$ [D] 5

16. 060814a, P.I. A.N.6

An expression equivalent to $3!$ is

- [A] $3 \cdot 3 \cdot 3$ [B] -3 [C] $3 \cdot 3$ [D] $3 \cdot 2 \cdot 1$

17. 080503a, P.I. A.N.6

The value of $\frac{7!}{3!}$ is

- [A] 7 [B] 24 [C] 840 [D] 4

18. 060605a, P.I. A.N.6

What is the value of $\frac{8!}{4!}$?

- [A] 1,680 [B] $4!$ [C] 2 [D] $2!$

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[18] A

[1] D

[2] D

[2] No, and an appropriate explanation is given or the expression is evaluated correctly.

[1] No, and the correct order of operations is used to evaluate $2(3)^2 + 5$, but one computational error is made.

or [1] One conceptual error is made in evaluating the expression, but the question is answered appropriately.

or [1] Appropriate work is shown, but the question is not answered.

[0] No, but no explanation or an inappropriate explanation is given.

or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an

[3] obviously incorrect procedure.

[4] C

[5] C

[6] A

[7] C

[8] B

[9] D

[10] B

[11] B

[12] B

[13] C

[14] B

[15] B

[16] D

[17] C