

Are You an Algebra Ace?

Name: _____

Find the answer to each of the following Algebra problems. If your answers add up to 100, then you probably aced this one. Be sure to show your work!
Good Luck!



1. Find the value of the expression $-4^2 - 36 \div 3 \cdot 2$.

2. Find the value of x that solves the equation: $-\frac{5}{2} + \frac{3x}{10} = \frac{4}{5}$.

3. Which choice, when substituted into the inequality $8 < a + 6 < 12$, makes the statement true?

(1) -4

(2) 0

(3) 8

(4) 4

4. After selling tickets to a play, Jonah realizes that he has twice as many one dollar bills as he has five dollar bills, and he also has 6 less ten dollar bills as he has one dollar bills. If his total money with these bills is \$237, how many five dollar bills does he have?

5. What is the value of $(-6)(12^0)$?

6. Which expression is equivalent to $(3x^3)(2x)^2$?

(1) $6x^6$

(2) $12x^6$

(3) $6x^5$

(4) $12x^5$

7. Find the value of x for the system:
 $2x + 4y = 0$
 $3x + y = 10$

1. _____

2. _____

3. _____

4. _____

5. _____

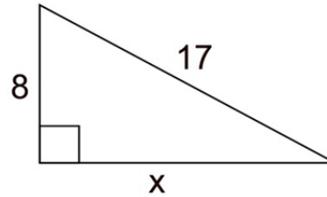
6. _____

7. _____

8. Which is equivalent to $(5x + 3)(3x - 4)$?
- (1) $15x^2 - 12$ (3) $15x^2 - 11x - 12$
 (2) $15x^2 + 11x - 12$ (4) $15x^2 + 8x - 12$

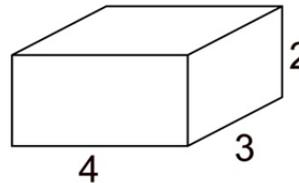
9. When simplified, the expression $\sqrt{48} - 2\sqrt{27}$ is equivalent to:
- (1) $-2\sqrt{3}$ (2) $10\sqrt{3}$ (3) $4\sqrt{3} - 18$ (4) $4\sqrt{2} - 6\sqrt{3}$

10. Find the missing side, x , for the triangles shown at the right.



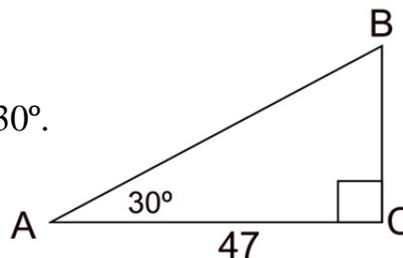
11. In simplest terms, what is the product of $\frac{x^2 - 16}{2x^2 - 8x} \cdot \frac{16x}{x + 4}$?

12. Find the surface area of the rectangular solid at the right.



13. In a bag there are 3 white marbles and an unknown number of blue marbles. If Tom draws one marble out of the bag at random, and he knows that the probability of drawing a blue marble is two out of three, how many blue marbles must be in the bag?

14. On the triangle shown, $AC = 47$, and $m\angle A = 30^\circ$. Find BC , to the nearest integer.



8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

TOTAL: _____