

Name: _____

Date: _____

Mrs. Roubos

8A

Order of Operations and Evaluating Algebraic Expressions Algebra 1 Homework

Skills

1. Compute each of the following without using a calculator.

(a) $-3(\sqrt{16} - \sqrt{9})$

(d) $\frac{4 + \sqrt{36}}{2(-1)}$

(b) $10 - 2 \times 3$

(e) $(15 - 2 \cdot 6)^3$

(c) $\sqrt{13^2 - 12^2}$

(f) $\frac{4 + \sqrt{64}}{4 - \sqrt{64}}$

2. If $x = 5$, then find the value of each of the following algebraic expressions.

(a) $6x + 2$

(b) $-2x^2 - x + 6$

3. If $x = -2$, then find the value of each of the following algebraic expressions.

(a) $4 - 3x$

(b) $2x - x^2$

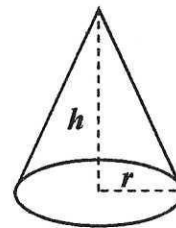
4. If $P = 2l + 2w$, then find the value of P if $l = 16$ and $w = 35$.

5. If $S = 2(\pi r^2 + \pi r h)$, then determine the value of S , to the *nearest tenth*, if $r = 4$ and $h = 5$.

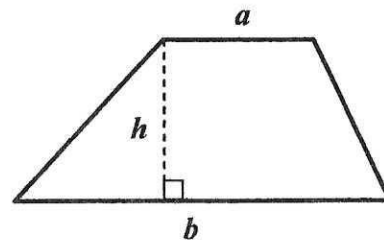
Applications

6. A concession stand operator is going to purchase x cases of soda for \$5.99 each and y bags of chips for \$0.69 each. If C represents the total cost, in *dollars*, for the operator to purchase x cases of soda and y bags of chips, then $C = 5.99x + 0.69y$. Find the total cost if the operator purchases 11 cases of soda and 125 bags of chips.

7. In order to calculate the base radius of a right circular cone, the formula $r = \sqrt{\frac{3V}{\pi h}}$ can be used, where V represents the volume of the cone and h represents the height of the cone. Find the value of r if $V = 75$ and $h = 4$. Give your answer to the *nearest hundredth*.



8. The area of a trapezoid is given by the formula $A = \frac{1}{2}h(a+b)$, where a and b represent the lengths of the parallel bases and h represents the height. Determine the area of a trapezoid whose height is 4.2 meters and whose bases have lengths 12.6 meters and 9.3 meters, respectively. Give your answer to the *nearest tenth* of a square meter.



Reasoning

9. Use the numbers 3, 4, 5, and 6 (each exactly once) together with the operations $+$, \cdot , and \div to create a numerical expression whose value is 22.
10. If $x = 12$, then which expression is larger? $2x^2 - 18x$ or $5x + 14$
By how much?