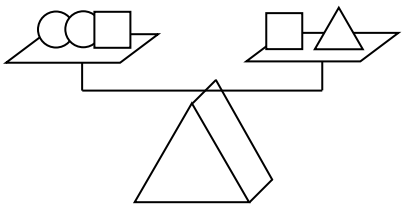
Name_____ Period _____ Date_____

VARIABLES AND BALANCE (EE1)
Essentials Pre-Assessment

1. The total weight of the scale to the right (both sides together) is 44 units. The triangle weighs 16 units. Find the weight of the circle.



Use the menu below for problem 2.

PIZZA SHOP MENU (The variable represents the cost of an item.)	
Pizza	**Drinks**
Cheese slice (c) $1.25	Small drink (s) $1.00
Pepperoni slice (p) $1.75	Medium drink (m) $1.50
	Large drink (L) $2.00

2. Find a menu item with a cost that makes the following equations true. In different problems, the ☐ need not represent the same menu item.

a. $3 \square \boxed{} = c + p$	Menu item: Cost of menu item:
b. $2(s + L) = 2m + p + \boxed{}$	Menu item: Cost of menu item:

3. Solve each equation. Write MM if you used mental math. Otherwise show all work.

a. $7 - x = 3$	b. $24 = n + 9$
c. $5m = 60$	d. $\frac{y}{6} = 8$

4. Describe in your own words the difference between an expression and an equation. Include examples.

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EXPRESSIONS AND BALANCE (EE2)
Essentials Pre-Assessment

1. Choose ALL expressions below that are equivalent to $2(5 + w)$.

   A. $10 + w$ B. $2w + 10$ C. $2w - 10$ D. $w + 5 + w + 5$

2. Choose ALL expressions below that are equivalent to $12y + 8x$.

   A. $4(3y + 2x)$ B. $3(4y + 3x)$ C. $4(3y + 8x)$ D. $4(3y + x)$

3. Choose ALL expressions below that are equivalent to $5g - 9 + 2 + 7g$

   A. $12g + 11$ B. $-2g + 11$ C. $12g + (-7)$ D. $12g - 7$

4. Write and solve equations for each problem below.

a. The perimeter of a triangle is 103 cm. The second side is 2 cm shorter than the first side. The third side is 5 cm longer than twice the length of the first side. How long is each side?	b. Deni says, "I'm thinking of a number. When you add 8 to my number, multiply the sum by 4, and then subtract 11, the result is 77." What is Deni's number?

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EXPRESSION, EQUATIONS, AND APPLICATIONS (EE3)
Essentials Pre-Assessment

1. Choose all of the expressions that are equivalent to $3x + 2(x + 1) – 2 – x$.

   A. 5 B. $4x$ C. $3x + x$ D. $5x$ E. $5x + 2$

2. Solve each equation for x and check.

a. $4 – 6x = 2(x– 8) + 2x$	b. $\frac{1}{3}x + 2 = \frac{1}{6}(x – 6)$
Check:	Check:

3. The length of a patio is four times its width. The perimeter is 80 feet. Find the length and the width. Draw a diagram and show your work using algebra.