Unit 4 – Applications with Equations ("Word Problems")
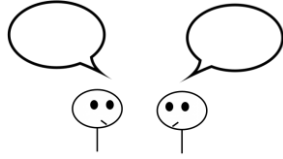
Let's work together.

Multiple Choice

1. Michael has 7 more dimes than nickels. Which expression represents the amount of money he has if x represents the number of nickels?

    (a) $0.05(x - 7) + 0.10x$

    (b) $0.05(x + 7) + 0.10x$

    (c) $0.05x + 0.10(x - 7)$

    (d) $0.05x + 0.10(x + 7)$

2. If $x - 3$ represents the largest value of three consecutive integers, which expression represents the smallest value?

    (a) $x - 1$

    (b) $x - 5$

    (c) $x - 2$

    (d) $x - 4$

3. Sue has a total of 15 coins made up of dimes and quarters. If x represents the number of dimes, represent the number of quarters Sue has in terms of x.

    (a) $15 + x$

    (b) $15x$

    (c) $15 - x$

    (d) $x - 15$

4. Jeremy bought flowers for a price that can be represented by $8x$. Represent 5 less than half that amount.

    (a) $8x - 5$

    (b) $4x - 5$

    (c) $5 - 8x$

    (d) $5 - 4x$

Solve the following problems <u>algebraically</u>. Remember to…

1) **Read the problem carefully and make sense of the situation.**
2) **Define all unknowns in terms of one variable.**
3) **Set up an equation that reflects the situation.**
4) **Solve the equation and make sense of the solution.**
5) **Answer the question.**
6) **Make sure your answer(s) are complete, correct and reasonable.**

TURN OVER TO GET STARTED!

5.   Ryan is thinking of two rational numbers in the ratio of 7:9. If ten is subtracted from twice their sum, the result is 38. Find both numbers.

6.   Of two consecutive integers, four times the smaller is 30 more than three times the larger. Find both integers.

7.   There are three consecutive even integers such that twice the middle number decreased by 20 is equal to the third number. Find all the integers.

8.   Gary's lemonade stand sold small cups of lemonade for $1.25 each and large cups of lemonade for $2.50 each. If 155 cups of lemonade were sold, and Gary collected $265, how many small cups of lemonade were sold?

9.   Sixteen years from now, Sophia's age will be twice her age 12 years ago. Find her present age. Let x represent Sophia's present age.

10.   Greg paid $26.25 in taxi fare from the train station to the hotel. The cab charged $3.75 for the first mile plus $1.50 for each additional mile. How many miles was it from the train station to the hotel?

PIPS QUESTION – *PERSEVERE IN PROBLEM SOLVING!*

The sandboxes at Winston Elementary School are being adjusted to fit more sand in them. The original square shape sandbox is being adjusted by doubling one side in length and decreasing the other side by 1 meter. The perimeter of the new sandbox is 4 meters more than the perimeter of the original sandbox. Determine the side length, in meters, of the original square shaped sandbox.
HINT: Draw and label a diagram of both sandboxes.