On a separate sheet of paper, do the following for each word problem: define the variable/unknowns, write an algebraic equation, solve using proper steps, and state the final answer in a complete sentence.
Consecutive Integers: {…, -3, -2, -1, 0, 1, 2, 3, …}.
The three types of situations:

If *n* is defined as an integer, then the next two consecutive integers are *n*+1 and *n*+2

If *n* is defined as an even integer, then the next two consecutive even integers are

If *n* is defined as an odd integer, then the next two consecutive odd integers are *n*+2 and *n*+4

Example:

The sum of three consecutive even integers is 30 more than the largest.

n = smallest even integer
n+2 = middle even integer
n+4 = largest even integer

$$n + n + 2 + n + 4 = 30 + n + 4$$
$$3n + 6 = n + 34$$
$$\frac{-n \qquad -n}{2n + 6 = 34}$$
$$\frac{-6 \quad -6}{\frac{2n}{2} = \frac{28}{2}}$$
$$n = 14$$

The three consecutive even integers are 14, 16, and 18.

1. The sum of four consecutive integers is -42. What are the integers?

2. The sum of four consecutive even integers is -100. What are the integers?

3. Find three consecutive odd integers whose sum is 105.

4. The sum of three consecutive odd integers is 40 more than the smallest. What are the integers?

5. The greater of two consecutive even integers is six less than twice the smaller.

6. The least of three consecutive odd integers is 2 more than half the largest. What are the integers?

7. The lengths of the sides of a triangle are consecutive even integers. Find the length of the longest side if it is 22 cm shorter than the perimeter.

8. Cingular Wireless offers a cell phone plan that costs $49.99 per month. Verizon Wireless offers a plan that costs $54.99 per month. With Cingular, additional minutes cost $0.40 and with Verizon additional minutes cost $0.35. How many additional minutes will it take for a monthly bill from Cingular to be the same as Verizon?

9. The cost to purchase a song from iTunes is $0.99 per song. To purchase a song from Napster, you must be a member. The Napster membership fee is $10. In addition, each purchased song costs $0.89. How many songs must be purchased so that the costs are the same?

10. A family has three options for a child's birthday party: Adventure Plex, Bright Child, and Chuck E. Cheese. At Adventure Plex, there is a flat fee of $300, each child costs $12. At Bright Child, there is a $180 flat fee, each child costs $15. At Chuck E. Cheese, there is not flat fee, but each child costs $18.

    a. Determine the breakeven point for Adventure Plex and Bright Child.

    b. Determine the breakeven point for Adventure Plex and Chuck E. Cheese.

    c. Determine the breakeven point for Bright Child and Chuck E. Cheese.

11. Homer Simpson weighs 400 pounds. He is on a diet to lose 5 pounds each week. Barney Gumble weighs 322 pounds. He is on a diet to lose 3 pounds each week. How long will it take for them to weigh the same?

12. The Comic Book Guy weighs 435 pounds and is on a diet to lose five pounds each week. Professor Frink weighs 123 pounds and is on a diet to gain three pounds each week. How long will it take for them to weigh the same?

13 At McDonald's, the barbecue sauce packet has five fewer calories than the sweet-n-sour sauce packet. Ten barbecue sauce packets have the same amount of calories as nine sweet-n-sour sauce packets. How many calories does each have?

14. A 2000L tank containing 550L of water is being filled with water at the rate of 75L/minute from a full 1600L tank. How long will it be before the two tanks have the same amount of water?

15. Bart has two choices to make a long distance phone call. His two choices are:10-10-220 and AT&T. Using 10-10-220, the cost is 99¢ for the first twenty minutes, and 7¢ for each additional minute. AT&T just charges 6¢ for each minute. After how many total minutes will it be less expensive to use AT&T? Assume the call is at least 20 minutes.

16. Your family is moving into a new home. Rather than do the work yourselves, you get price quotes from two different moving companies. Starving Students Movers charges $100 for the first hour and $50 for subsequent hours. Allied Movers charges $60 for each hour. After how many hours will it be more advantageous to have Starving Student move your families' junk?