

Day 7 – Creating Algebraic Expressions from a Context Notes

Yesterday, you explored creating algebraic expressions from looking at patterns and using tables. Today, you are going to continue to create algebraic expressions, but at a much deeper level.

Scenario A: A local restaurant is busiest on Saturday evenings. The restaurant has three cooks who work during this time. The cooks divide the incoming orders among themselves. So far, they have prepared 27 total.

- a. If 15 additional orders come in, how many meals will each cook prepare?

$$\frac{27 + 15}{3} = \frac{42}{3} = 14 \text{ meals per cook}$$

- b. If 42 additional orders come in, how many meals will each cook prepare?

$$\frac{27 + 42}{3} = \frac{69}{3} = 23 \text{ meals per cook}$$

- c. Write an expression to represent the unknown number of meal each cooks prepare. Let m represent the number of additional orders.

$$\frac{27 + m}{3}$$

Scenario B: Trey is selling candy bars to raise money for his basketball team. The team receives \$1.25 for each candy bar sold. He has already sold 25 candy bars.

- a. If Trey sells 10 more candy bars, how much money will he raise for the basketball team?

$$1.25 (10 + 25) = \$43.75$$

- b. If Trey sells 45 more candy bars, how much money will he raise for the basketball team?

$$1.25 (45 + 25) = \$87.50$$

- c. Write an expression to represent the unknown amount of money Trey will raise for the basketball team. Let c represent the additional candy bars sold.

$$1.25 (c + 25)$$

Scenario C: Four friends decide to start a summer business of yardwork for their neighborhood. They will split all their earnings evenly. They have lawnmowers, but need to invest some money into rakes, trash bags, rakes, and hedge trimmers. They have to spend \$75 on these supplies.

a. How much profit will each friend receive if they earn \$350 the first week?

$$\frac{350 - 75}{4} = \$68.75 \text{ per person}$$

b. How much profit will each friend receive if they earn \$475 the first week?

$$\frac{475 - 75}{4} = \$100 \text{ per person}$$

c. Write an expression that represents the unknown profit for each friend. Let d represent the amount of money earned.

$$\frac{d - 75}{4}$$

Scenario D: Rebekah, Daily, Savannah, and Faith each collect DVDs.

Daily says "I have twice as many DVDs as Rebekah."

Savannah says "I have four more DVDs than Daily."

Faith says "I have three times as many as Savannah."

# of DVDs for Rebekah	# of DVDs for Daily	# of DVDs for Savannah	# of DVDs for Faith	Total # of DVDs
2				
5				
8				
x				