6.3 More Modeling with Equations

NOTES

Math 7

Write your questions here!

Ex 1: Find an equation and solve for each of the situations below

Twice the sum of a number and eleven is 4. Find the number.

Six less than the sum of twice a number and three times a number is equal to 39.

Ex 2: The sum of three consecutive integers is 153. Find each integer.

For consecutive Integers, use:

n
n + 1
n + 2
Etc.

What is the unknown value in this situation? What would be a good variable to use for it?

What's an equation to model this situation? Solve it. Make sure you include units that describe your answer.

Ex 3: Sully loves Lebron. He sets up a store that sells shirts claiming Lebron is better Jordan. Suppose Sully recently had a sale and took $\frac{1}{5}$ off of each shirt he sold. That made Mr. Brust purchase a shirt, which cost him 32 dollars. What was the original cost of the shirt?

Find a model for the situation, define its variable and solve it.

Who was Better…

LeBron

Or

MJ ?

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Ex 4: The width of a rectangle is 4 ft less than its length. Find each side of the rectangle if the perimeter equals 168 ft.

Find a model for the situation, define its variable and solve it.

Don't Deny it…You really wanna Try it!

Ex 5 Mr. Brust wants to sell mini-pizzas at lunch to make money for his new break-dancing Club. He is going to sell each Pizza for ¼ more than he bought it for. If Mr. Bean buys a mini Pizza for $6.00, how much did that mini-pizza cost Mr. Brust?

Find a model for the situation, define its variable and solve it.

SUMMARY:

Now, summarize your notes here!

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PRACTICE

Directions: Circle the equation that best fits the given situation. Then SOLVE the equation.	
1) Adding 1 to twice the sum of a number and 8 is -19. What's the number?	2) Twice the sum of a number and nine times that number is 100. What's the number?
a. $2n + 8 + 1 = -19$ c. $2(n + 8 + 1) = -19$	a. $2n + 9n = 100$ c. $2(n + 9n) = 100$
b. $2(n + 8) + 1 = -19$ d. $2n + (8 + 1) = -19$	b. $2n + (9 + n) = 100$ d. $2(n + 9n = 100)$
Solution:	Solution:

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3) Mr. Bean sells a can of his beans half-off. The cost of the beans after the discount is $4. How much are the beans normally?

a. $c + \frac{1}{2}c = 4$

c. $\frac{1}{2}c - c = 4$

b. $c - \frac{1}{2}c = 4$

d. $\frac{1}{2}(c) = 4$

Solution:

4) Sully sells his shirts after adding $\frac{1}{4}$ of the price and an additional 2 dollars for shipping. If you ordered a shirt and it cost you 42 dollars including shipping, how much did it cost Sully?

a. $s + \frac{1}{4}s + 2 = 42$

c. $\frac{1}{2}s - s + 2 = 42$

b. $s - \frac{1}{2}s + 2 = 42$

d. $\frac{1}{2}(s) + 2 = 42$

Solution:

Directions: For each situation make an equation, define your variables and solve your equation.

5) The sum of three consecutive integers is -39. Find the three integers.

Equation: **Answer:**

6) Mr. Brust takes a lot of naps during the summer. Last summer, Brust took 76, which is $\frac{1}{3}$ times more than the previous summer. How many naps did Brust take that previous summer?

Equation: **Answer:**

7) Mr. Kelly takes $\frac{1}{10}$ th of the score off of any Unit test that is taken late. If a student who takes a test late received a final grade of 72, what score would the student have received if the test was on time?

Equation: **Answer:**

8) The length of a rectangle is 7*cm* more than the width. Find the length of each side of the rectangle if the perimeter is 58 *cm*.

Equation: **Answer:**

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WRAP UP

Directions: For each situation make an equation, define your variables and solve your equation.

1) Four times the sum of 3 consecutive numbers is 912. Find the three numbers.

Equation: **Answer:**

2) Mr. Brust decides to sell regular size pizzas for his break-dancing club. To the cost of each pizza, he adds one dollar per topping and then charges 5 dollars to deliver the order.

a. Mr. Bean orders 3 large pizzas, each with 2 toppings, and has them delivered for $42.50. Define your variables. Then, write and solve an equation to find the cost of a large pizza.

b. Brust decides he needs to increase the price of his toppings. Mr. Bean then orders 2 large pizzas, each with 3 toppings, and has them delivered for $33.50. Using your answer from part (a), define your variables, write and solve an equation to find the new cost of the toppings.

EXIT TICKET –

Below are two POSSIBLE scenarios for the given model. For each explain WHY or WHY NOT each situation would be a possible scenario for the equation.

$$2(x+3)+2x=54$$

Scenario #1: For Valentine's day, the Glee Club will sing a special song to your Valentine for a certain price. For 3 extra dollars, they will also dance. Sully orders 4 Valentines, two of them with a dance, for $54.

Scenario #2: A rectangle has a length that is 3 longer than its width. The perimeter is 54.

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