8.1 Creating Equations

NAME: _____ HOUR: _____

1-3 Write the following statements as mathematical expressions

Example 1 Question: Six more than the quotient of eighteen and a number n?

Answer: $6 + \frac{18}{n}$

1. Difference of five times a number n and ten?

2. The quotient of three and the quantity of three less than one-sixth of a number x?

3. The difference of seven times a number x and the quotient of the number x and 3?

4-6 Write the following mathematical expressions into statements

Example 2 Question: $\frac{x}{6x-5}$

Answer: "The quotient of a number x and the quantity 'six times the number minus five."

4. $2 + \frac{100}{x}$

5. $5 + \frac{1}{2}x$

6. $(5 - x) + \frac{10}{x}$

First **write an equation** for each of the following situations, second **solve the equation** for unknown.

7. A salesman earns a $40,000 salary plus a commission of $300 for every machine he sells. He wants to earn $100,000, how many machines does he need to sell?

EQUATION:

SOLUTION:

8. Deep under the sea, a school's play charges $3 for children and $7 for adults. They don't want to be poor unfortunate souls, so they need to earn $210. If 24 adults come, how many children need to be with them?

EQUATION:

SOLUTION:

8. Eight more than the square of a number is the same as 6 times the number. Find the number?

EQUATION:

SOLUTION:

9. Seven less than 4 times the square of a number is 18. Find the number?

EQUATION:

SOLUTION:

10. Mr. Mumford is on a diet. He currently weighs 220 pounds. He will lose 4 pounds per month. How many months will it take him to reach 195 pounds?

EQUATION:

SOLUTION:

11. Mr. Parker lives is a square (because he is a square), he decides to increase his square's sides by 3 which makes the area he lives in equal to 64 m^2. What was the side lengths of the original square?

EQUATION:

SOLUTION:

12. Mr. Nelson was doing some gardening; he has a rectangular garden plot that is 4 by 5. He decided to grow more carrots so he increased the dimensions of his plot by the same amount on each side so he has an area of 56 m^2. What will the dimensions of his new garden plot need to be?

EQUATION:

SOLUTION:

13. The length of a photograph 1 cm less than twice the width. The area is 45 cm^2. Find the dimensions of the photograph?

EQUATION:

SOLUTION:

14. A square field had 5 m added to its length and 2 m added to its width. The field then had an area of 130 m^2. Find the length of a side of the original field?

EQUATION:

SOLUTION:

15. A rectangular lawn that is 8 m by 4 m is surrounded by gravel of uniform width. The combined area of the lawn and the gravel is 165 m^2. What is the width of the gravel around the lawn?

EQUATION:

SOLUTION: