MPM 1D1 Review of Word Problems name:_____

For the problems below, write the appropriate LET statements and the equation. Solve the equation and conclude your solution with therefore statement.

1. Five times a number is the same as the number decreased by 52. Find the number.

Let x represent the number.

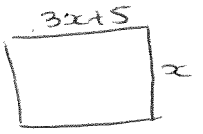
$5x = x - 52$

$4x = -52$

$x = -13$

∴ The number is -13.

2. To find the length of a certain rectangle you must triple the width and add 5 metres. If the perimeter of the rectangle is 74 metres, determine the dimensions.



$P = 2(3x+5)+2x$

$6x+10+2x = 74$

$8x = 64$

$x = 8$

∴ The width is 8m and length is 29m.

3. Jeff has $4.05 made up of nickels and dimes. If he has seven times as many nickels as dimes, how many dimes does he have?

Let x represent # of dimes

∴ $7x$ represents # of nickels

$0.1x + 0.05(7x) = 4.05$

$0.45x = 4.05$

$x = 9$

∴ Jeff had 9 dimes and 63 nickels.

4. The sum of two numbers is 95. The larger number increased by 21 equals the smaller number increased by 32. Find the numbers.

Let x represent the first #

$95 - x$ represents 2nd #

$(x+21) = (95-x)+32$

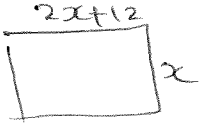
$2x = 95+32-21$

$2x = 106$

$x = 53$

∴ The numbers are 53 and 42.

5. The length of a rectangle is 12cm more than twice the width. The perimeter of the rectangle is 66cm. Find the length and the width of the rectangle.



$P = 2(2x+12)+2x$

$4x+24+2x = 66$

$6x = 42$

$x = 7$

∴ The width is 7cm and 26cm.

6. The sum of two numbers is 45. If 4 times the smaller number is increased by 3 times the larger number, the result is 150. Find the numbers.

Let x represent the first number

∴ $45-x$ represents the second #.

$4x+3(45-x) = 150$

$4x+135-3x = 150$

$x = 15$

∴ The numbers are 15 and 30

7. The sum of two consecutive even integers is 114. What are the integers?

Let x, $x+2$ represent the #s.

$x + x + 2 = 114$

$2x = 112$

$x = 56$

∴ The integers are 56 and 58.

8. Ron has $.20.50 made up of dimes and quarters. If there are 100 coins in all, how many quarters are there?

Let x represent # of dimes

∴ $100 - x$ represents # of quarters.

$0.1x + 0.25(100 - x) = 20.50$

$0.1x + 25 - 0.25x = 20.50$

$-0.15x = -4.50$

$x = 30$

∴ Ron had 30 dimes and 70 quarters.

9. A parking meter contained 78 coins made up on dimes and nickels. The total value of the coins was $5.20. How many dimes did it contain?

Let x represent # of dimes

∴ $78 - x$ represents # of nickels.

$0.1x + 0.05(78 - x) = 5.20$

$0.1x + 3.90 - 0.05x = 5.20$

$0.05x = 1.30$

$x = 26$

∴ The parking meter had 26 dimes.

10. Find two consecutive integers such that the larger minus twice the smaller is -13.

Let x represent the smaller #.

∴ $x + 1$ represents the larger #.

$x + 1 - 2x = -13$

$-x = -14$

$x = 14$

∴ The two numbers are 14 and 15.

Answers: 1) -13 2) 8m by 29m 3) 9 dimes 4) 53 and 42

5) l = ~~38~~ cm, w = 7 cm 6) 15 and 30 7) 56 and 58 8) 70quarters

9) 26 dimes, 52 nickels 10) 14 and 15

Additional questions for review: CP page 37# 1bde, 2ce, 3a, 4acef