Unit 4 – Writing Linear Equations   PRACTICE TEST!

Type 1: Find two Missing Numbers

(1) The sum of two numbers is 84. The larger of the two numbers is twelve more than the smaller number. What are the two numbers?

| larger | X+12 | 48 |
| smaller | X | 36 |

$$X + X + 12 = 84$$
$$2x + 12 = 84$$
$$\underline{ -12 \quad -12}$$
$$\frac{2x}{2} = \frac{72}{2}$$
$$\boxed{X = 36}$$

The numbers are 36 and 48.

Type 2: Find the Missing Number

(2) Twice a number is the same as 6 more than 8 times the number.

Let n = number

$$2n = 6 + 8n$$
$$\underline{-8n \qquad -8n}$$
$$\frac{-6n}{-6} = \frac{6}{-6}$$
$$\boxed{n = -1}$$

The number is -1.

Type 3: Consecutive Integers! ***

(3) Find three consecutive even integers whose sum is 54.

1st	X	16
2nd	X+2	18
3rd	X+4	20

$$3x + 6 = 54$$
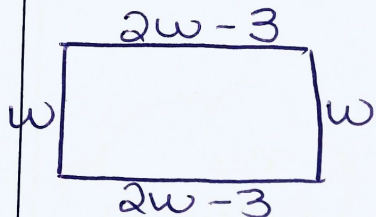$$\underline{-6 \quad -6}$$
$$\frac{3x}{3} = \frac{48}{3}$$
$$\boxed{X = 16}$$

The numbers are 16, 18, 20.

Type 4: Shape Problems

(4) Rectangles: The length of a rectangular garden is 3 less than twice its width. If the perimeter of the garden is 84 inches, find the dimensions of the garden.

length	$2w-3$	27
width	w	15

$$6w-6=84$$
$$+6 \quad +6$$
$$6w=90$$
$$\frac{6w}{6}=\frac{90}{6}$$
$$\boxed{w=15}$$

2w-3
w |w
2w-3

27 inches and 15 inches.

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(5) Triangles: The length of the second side of a triangle is 2 inches less than the length of the first side. The length of the third side is 12 inches more than the length of the first side. The perimeter of the triangle is 40 inches. Find the length of each side of the triangle.

x / x-2
x+12
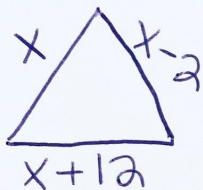
$$3x+10=40$$
$$-10 \quad -10$$
$$\frac{3x}{3}=\frac{30}{3}$$
$$x=10$$

1st	x	10 in
2nd	$x-2$	8 in
3rd	$x+12$	22 in.

Type 5: Averages

(6) Kat has a score of 74 for each of his first three science quizzes. The score on her fourth quiz is a 92. What does she need on the fifth quiz to have an 80% average?

$$\frac{74+74+74+92+x}{5}=80$$

$$314+x=400$$
$$-314 \qquad -314$$
$$x=86$$

$$(5)\frac{314+x}{5}=80(5)$$

Kat needs an 86

Try this:

Three friends have ages that are consecutive integers. If their ages have a sum of 39 years, how old is each friend?