Math 9 Name: Answer Key

Modeling: 2-step Equations

a) Write a "Let..." statement first.
b) Create an equation that models the situation (*your model should require two undoing steps – one undoing addition or subtraction and one undoing multiplication*)
c) Solve the equation

1. Nine more than twice a number is 77. What is the number?

Let n = the number

$2n + 9 = 77$
$-9 \quad -9$

$\frac{2n}{2} = \frac{68}{2}$

$n = 34$

2. The difference of four times a number and thirteen is -1. What is the number?

Let n = the number

$4n - 13 = -1$
$+13 \quad +13$

$\frac{4n}{4} = \frac{12}{4}$

$n = 3$

3. Find a number such that six more than twice the number is -30.

Let n = the number

$2n + 6 = -30$
$-6 \quad -6$

$\frac{2n}{2} = \frac{-36}{2}$

$n = -18$

4. When 35 is diminished by three times a number, the result is 11. What is the number?

Let n = the number

$35 - 3n = 11$
$-35 \quad -35$

$\frac{-3n}{-3} = \frac{-24}{-3}$

$n = 8$

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5. You bought a magazine for $7 and some candy bars for $2 each. You spent a total $15. How many candy bars did you buy?

Let c = the number of candy bars

$$2c + 7 = 15$$
$$-7 \quad -7$$
$$\frac{2c}{2} = \frac{8}{2}$$
$$c = 4$$

∴ You bought 4 candy bars.

6. For a field trip 13 students rode in cars and the rest filled three buses. How many students were in each bus if 127 students went on the trip?

Let b = the number of students in each bus

$$3b + 13 = 127$$
$$-13 \quad -13$$
$$\frac{3b}{3} = \frac{114}{3}$$
$$b = 38$$

∴ There were 38 students on each bus.

7. A wise man once said "500 reduced by twice my age is 368." How old is the wise man?

Let a = the wise man's age

$$500 - 2a = 368$$
$$-500 \quad -500$$
$$\frac{-2a}{-2} = \frac{-132}{-2}$$
$$a = 66$$

∴ The wise man is 66 years old.

8. Kristin won 41 lollipops playing the bean bag toss at the carnival. At school she gave three lollipops to every student in her math class. She only has 5 lollipops left. How many students are in Kristin's math class (not counting Kristin)?

Let m = the number of students in Kristin's math class

$$41 - 3m = 5$$
$$-41 \quad -41$$
$$\frac{-3m}{-3} = \frac{-36}{-3}$$
$$m = 12$$

∴ There are 12 students (plus Kristin) in Kristin's math class.