Error Analysis What is the error in the work?

71.

$$12 \ominus 3y = 15$$
$$-3y = 3$$
$$\frac{-3y}{-3} = \frac{3}{-3}$$
$$y = -1$$

the negative sign was left
off of the 3y after the 12
was moved. Thus, you would
be dividing by -3 not 3.
The answer should be y = -1

72.

$$\frac{m}{3} - 9 = -21$$
$$\frac{m}{3} - 9 + 9 = -21 + 9$$
$$3 \cdot \frac{m}{3} = -12 \cdot 3$$
$$m = -4$$
$$-36$$

the error was dividing by 3 to get -4
when the correct step was to multiply
by 3.
The answer should be m = -36

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1. Beneath Earth's surface, the temperature increases $10°C$ every kilometer.
Suppose that the surface temperature is $22°C$, and at the bottom of a gold mine
it is $45°C$. Write and solve an equation to find the depth of the gold mine.

$$22 + 10x = 45$$
$$x = 2.3 \text{ km}$$

What is a good name for this kind of equation?   Multi-Step Equation

2. $7m + 8 - 2m + 13 = 75$

$$5m + 21 = 75$$
$$-21 \quad -21$$
$$\frac{5m}{5} = \frac{54}{5}$$
$$m = 10.8$$

3. $6 - 2(Q + 8) - 9 + 5Q = 31$

$6 - 2Q - 16 - 9 + 5Q = 31$

$3Q \quad -19 = 31$

$ +19 \quad +19$

$\dfrac{3Q}{3} = \dfrac{50}{3}$

$Q = \dfrac{50}{3}$