Chapter 8-1 to 8-4 Test Review

Writing Equations:
Must define the variable, write the equation, and solve.

1) The quotient of a number a 4, less 21 is -3.

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1) The quotient of a number a 4, less 21 is -3.

Let x = a number

$$\frac{x}{4} - 21 = -3$$

$$+ 21 \quad + 21$$

$$4 \cdot \frac{x}{4} = 18 \cdot 4$$

$$x = 72$$

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2) Thirty-two minus the product of 2 and a number is 8.

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2) Thirty-two minus the product of 2 and a number is 8.

Let x = the number

$$32 - 2x = 8$$
$$-32 \qquad\qquad -32$$

$$\frac{-2x}{-2} = \frac{-24}{-2}$$

$$x = 12$$

Writing Equations:
Must define the variable, write the equation, and solve.

3) The product of 6 and a number increased by 13 equals 67.

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3) The product of 6 and a number increased by 13 equals 67.

$$\text{Let } x = \text{the number}$$

$$6x + 13 = 67$$
$$ -13 \quad -13$$
$$\frac{6x}{6} = \frac{54}{6}$$
$$x = 9$$

Writing Equations:
Must define the variable, write the equation, and solve.

4) One-third of a number less 10 is -30.

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4) One-third of a number less 10 is -30.

Let x = the number

$$\frac{1}{3}x - 10 = -30$$

$$+10 \qquad +10$$

$$\frac{3}{1} \cdot \frac{1}{3}x = \frac{-20}{1} \cdot \frac{3}{1}$$

$$x = -60$$

Boys   v   Girls

Review Challenge

1) $\dfrac{x}{-9} = 8$

$$1) \; ^-9 \cdot \frac{x}{-9} = 8 \cdot -9$$

$$x = ^-72$$

2) $-\dfrac{1}{4}c = 16$

2) $-\dfrac{1}{4}c = 16$

$$\dfrac{-4}{1} \cdot \dfrac{-1}{4}c = \dfrac{16}{1} \cdot \dfrac{-4}{1}$$

$$c = {}^-64$$

3) $\dfrac{1}{3} n = \dfrac{2}{9}$

3) $\dfrac{1}{3}n = \dfrac{2}{9}$

$\dfrac{3}{1} \cdot \dfrac{1}{3}n = \dfrac{2}{9} \cdot \dfrac{3}{1}$

$n = \dfrac{2}{3}$

4) $6k + 2 = 26$

4) $6k + 2 = 26$

$- 2 \quad- 2$

$$\dfrac{6k}{6} = \dfrac{24}{6}$$

$k = 4$

5) $15n - 62 = 73$

5) $15n - 62 = 73$

$$+62 \qquad +62$$

$$\frac{15n}{15} = \frac{135}{15}$$

$$n = 9$$

6) $8m + 7 + m = 16$

6) $8m + 7 + m = 16$

$9m + 7 = 16$

$-7 \quad -7$

$\dfrac{9m}{9} = \dfrac{9}{9}$

$m = 1$

7) $-\dfrac{1}{3}x + 10 = 18$

7) $-\frac{1}{3}x + 10 = 18$

$$\phantom{-\frac{1}{3}x +}\underline{-10 \quad -10}$$

$$\frac{-3}{1} \cdot -\frac{1}{3}x = \frac{8}{1} \cdot \frac{-3}{1}$$

$$x = -24$$

8) $-8 = \frac{2}{5}n - 4$

8) $-8 = \frac{2}{5}n - 4$

$ +4 \phantom{= \frac{2}{5}n} +4$

$\frac{-4}{1} = \frac{2}{5}n$

$\frac{5}{2} \cdot \frac{-4}{1} = \frac{5}{2} \cdot \frac{2}{5}n$

$-10 = n$

9) $2(8 - a) = 18$

9) $2(8-a) = 18$

$16 - 2a = 18$

$-16 \qquad -16$

$\dfrac{-2a}{-2} = \dfrac{2}{-2}$

$a = {}^-1$

10) $5 - 4y + y - 1 = -23$

10) $5 - 4y + y - 1 = -23$

$$-3y + 4 = -23$$
$$ - 4 \quad - 4$$
$$\frac{-3y}{-3} = \frac{-27}{-3}$$
$$y = 9$$

11) $\frac{1}{2}n + 11 = 15$

11) $\frac{1}{2}n + 11 = 15$

$\phantom{11)\ \frac{1}{2}n + } - 11 - 11$

$\frac{2}{1} \cdot \frac{1}{2}n = \frac{4}{1} \cdot \frac{2}{1}$

$n = 8$

12) $\frac{3}{2}(n - 10) = -21$

12) $\frac{3}{2}(n - 10) = -21$

$\frac{2}{3} \cdot \frac{3}{2}(n-10) = \frac{-\overset{7}{\cancel{21}}}{1} \cdot \frac{2}{\underset{1}{\cancel{3}}}$

$n - 10 = -14$

$\underline{+10 \qquad +10}$

$n = -4$

13)

6 less than the product of -4 and a number is 30

13)

6 less than the product of -4 and a number is 30

let n = the number

$-4n - 6 = 30$

$ +6 +6$

$$\frac{-4n}{-4} = \frac{36}{-4}$$

$n = -9$