Unit 6 Review: More Equations Name:_____

Solve the following equations. SHOW ALL STEPS!!!!

1. $\frac{2x}{5} = -32$

$5 \cdot \frac{2x}{5} = -32 \cdot 5$

$\frac{2x}{2} = \frac{-160}{2}$

$x = -80$

2. $-8 = -15 + y$

$+15 \quad +15$

$7 = y$

3. $9h + 2 = -88$

$-2 = -2$

$\frac{9h}{9} = \frac{-90}{9}$

$h = -10$

4. $10x - 3x + 1 = 29$

$7x + 1 = 29$

$-1 \quad -1$

$\frac{7x}{7} = \frac{28}{7}$

$x = 4$

5. $9 = m - 3 + 2m$

$9 = 3m - 3$

$+3 \quad +3$

$\frac{12}{3} = \frac{3m}{3}$

$4 = m$

6. $10 + 3x + 8 = 39$

$3x + 18 = 39$

$-18 \quad -18$

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

$x = 7$

7. $3 + 2(n - 5) = 13$

$3 + 2n - 10 = 13$

$2n - 7 = 13$

$+7 \quad +7$

$\frac{2n}{2} = \frac{20}{2}$

$n = 10$

8. $44 = 4v + 3(5v + 2)$

$44 = 4v + 15v + 6$

$44 = 19v + 6$

$-6 \quad -6$

$\frac{38}{19} = \frac{19v}{19}$

$2 = v$

9. $-40 = 4(4p - 3) - 2p$

$-40 = 16p - 12 - 2p$

$-40 = 14p - 12$

$+12 \quad +12$

$\frac{-28}{14} = \frac{14p}{14}$

$-2 = p$

10. $2.4p + 7(p - 2) = -42.2$

$2.4p + 7p - 14 = -42.2$

$9.4p - 14 = -42.2$

$+14 \quad +14$

$\frac{9.4p}{9.4} = \frac{-28.2}{9.4}$

$p = -3$

11. $5 = \frac{1}{3}(d - 18) + 1$

$5 = \frac{1}{3}d - 6 + 1$

$5 = \frac{1}{3}d - 5$

$+5 \quad +5$

$3 \cdot 10 = \frac{1}{3}d \cdot 3$

$30 = d$

12. $4x - 2(x - 5) + 1 = 11$

$4x - 2x + 10 + 1 = 11$

$2x + 11 = 11$

$-11 \quad -11$

$\frac{2x}{2} = \frac{0}{2}$

$x = 0$

Directions: Circle the equation that best fits the given situation. Then SOLVE the equation.

1) Four less than twice the sum of a number and 3 is -12. What's the number?

a. $2n + 3n - 4 = -12$

c. $2(n + 3 - 4) = -12$

b. $2(n + 3) - 4 = -12$

d. $4 - 2(n + 3) = -12$

Solution:

$2(n+3) - 4 = -12$
$2(n+3) = -8$
$2n + 6 = -8$
$2n = -14$
$n = -7$

2) Mr. Kelly takes $\frac{1}{5}^{th}$ of the score off of any Unit test that is taken late. If a student who takes a test late received a final grade of 72, what score would the student have received if the test was on time?

a. $s + \frac{1}{5}s = 72$

c. $s - \frac{1}{5}s = 72$

b. $s + \frac{1}{5} = 72$

d. $s + \frac{1}{5} = 72$

Solution:

$S - \frac{1}{5}S = 72$
$5 \cdot \frac{4}{5}S = 72 \cdot 5$
$4S = 360$
$S = 90$

3) The sum of three consecutive integers is -102. Find the three integers.

Equation:

Let n = 1st Int.
$n+1$ = 2nd Int
$n+2$ = 3rd Int

$n + n+1 + n+2 = -102$
$3n + 3 = -102$
$3n = -105$
$n = -35$

Answer:

$n = -35$
$n+1 = -34$
$n+2 = -33$

4) Mr. Bean sells bottles of beard oil for a hobby. Currently, you can buy a bottle ¼ off the original price for 12 dollars. How much is the original price?

Equation:

LET C = ORIGINAL COST

$C - \frac{1}{4}C = 12$
$4 \cdot \frac{3}{4}C = 12 \cdot 4$
$3C = 48$
$C = 16$

Answer:

$C = 16$ dollars

5) The length of a rectangle is 12 *cm* more than the width. Find the length of each side of the rectangle if the perimeter is 92 *cm*.

Equation:

W = WIDTH OF RECT

$2w + 2(w+12) = 92$
$2w + 2w + 24 = 92$
$4w + 24 = 92$
$4w = 68$
$w = 17$

Answer: WIDTH = 17 cm
LENGTH = 17 + 12 = 29 cm