DAY 2 - Solve MULTI Step Equations

1. $r - 2 = -r + 18$

$r + r = 18 + 2$

$2r = 20$

$\boxed{r = 10}$

2. $4 + z = z + 3z - 2$

$4 + z = z + 3z - 2$

$6 = 3z$

$\boxed{2 = z}$

3. $r - 3 = -2(r + 3)$

$r - 3 = -2r - 6$

$r + 2r = -6 + 3$

$3r = -3$

$\boxed{r = -1}$

4. $3(x + 6) = 2(x - 1)$

$3x + 18 = 2x - 2$

$3x - 2x = -2 - 18$

$\boxed{1x = -20}$

5. $\dfrac{5a - 2}{3} = 1$

$5a - 2 = 3$

$5a = 5$

$\boxed{a = 1}$

6. $6 = m - (3 + 2m)$

$6 = m - 3 - 2m$

$6 = -3 - 1m$

$9 = -1m$

$\boxed{-9 = m}$

7. $1 - (2 + w) = w + 5$

$1 - 2 - w = w + 5$

$1 - 2 - 5 = w + w$

$-6 = 2w$

$\boxed{-3 = w}$

8. $\dfrac{2}{3}(x + 3) = 4$

$\dfrac{2(x+3)}{3} = \dfrac{4}{1}$

$2(x+3) = 12$

$2x + 6 = 12$

$2x = 6$

$\boxed{x = 3}$

9. $6t - 7 = 2t + 5$

$6t - 2t = 5 + 7$

$4t = 12$

$\boxed{t = 3}$

10. $27 = 5 - \dfrac{y}{3}$

$27 - 5 = -1y \cdot 3$

$22 = -1y \cdot 3$

$66 = -1y$

$\boxed{-66 = y}$

11. $\dfrac{4x - 1}{3} = 5$

$4x - 1 = 15$

$4x = 16$

$\boxed{x = 4}$

12. $-6 = \dfrac{n}{2} - 10$

$4 = \dfrac{n}{2}$

$\boxed{8 = n}$

13. $-5(4x - 2) = -2(3 + 6x)$

$-20x + 10 = -6 - 12x$

$-20x + 12x = -6 - 10$

$-8x = -16$

$\boxed{x = 2}$

14. $\dfrac{3x - 2}{2} = \dfrac{6}{4}$

$4(3x - 2) = 12$

$12x - 8 = 12$

$12x = 20$

$\boxed{x = \dfrac{5}{3} \doteq 1.6}$

15. $-2x + 4 = 3x - 2$

$-2x - 3x = -2 - 4$

$-5x = -6$

$\boxed{x = \dfrac{6}{5} = 1.2}$

16. $\dfrac{y}{2} = \dfrac{y}{3} - 1 \cdot 3$

$\dfrac{y}{2} = \dfrac{(y-3)}{3}$

$3y = 2(y - 3)$

$3y = 2y - 6$

$3y - 2y = -6$

$\boxed{1y = -6}$

17. $\dfrac{y}{4} = \dfrac{y}{5} + 1 \cdot 5$

$\dfrac{y}{4} = \dfrac{(y+5)}{5}$

$5y = 4(y + 5)$

$5y = 4y + 20$

$5y - 4y = 20$

$\boxed{1y = 20}$

18. $\dfrac{x+1}{3} + \dfrac{x-2}{7} = 1$

$7(x + 1) + 3(x - 2) = 21$

$7x + 7 + 3x - 6 = 21$

$10x + 1 = 21$

$10x = 20$

$\boxed{x = 2}$

Solve TWO Step Word Problems

19. Aliyah had $24 to spend on seven pencils. After buying them she had $10. How much did each pencil cost? let x be cost per pencil

$$24 = 7x + 10$$
$$14 = 7x$$
$$2 = x$$

∴ each pencil cost $2

20. The sum of three consecutive even numbers is 48. What are the smallest of these numbers? let x be smallest #

$$x + (x+2) + (x+4) = 48$$
$$3x + 6 = 48$$
$$3x = 42$$
$$x = 14$$

∴ smallest # is 14

21. You bought a magazine for $5 and four erasers. You spent a total of $25. How much did each eraser cost? let x be cost/eraser

$$5 + 4x = 25$$
$$4x = 20$$
$$x = 5$$

∴ each eraser cost $5.

22. Sumalee won 40 super bouncy balls playing horseshoes at her school's game night. Later, she gave two to each of her friends. She only has 8 remaining. How many friends does she have? let x be total friends

$$40 - 2x = 8$$
$$-2x = -32$$
$$x = 16$$

∴ she has 16 friends

23. Imani spent half of her weekly allowance playing mini-golf. To earn more money her parents let her wash the car for $4. What is her weekly allowance if she ended with $12? let x be weekly allowance

$$\frac{1}{2}x + 4 = 12$$
$$\frac{1}{2}x = 8$$
$$x = 16$$

∴ her weekly allowance is $16

24. How old am I if 400 reduced by 2 times my age is 244? let x be my age

$$400 - 2x = 244$$
$$-2x = -156$$
$$x = 78$$

∴ I'm 78 yrs old

25. For a field trip 4 students rode in cars and the rest filled nine buses. How many students were in each bus if 472 students were on the trip? let x be students/bus

$$4 + 9x = 472$$
$$9x = 468$$
$$x = 52$$

∴ 52 students on each bus

26. Jill sold half of her comic books and then bought sixteen more. She now has 36. With how many did she begin? let x be books originally

$$\frac{1}{2}x + 16 = 36$$
$$\frac{1}{2}x = 20$$
$$x = 40$$

∴ she began with 40 books

8 + 2

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