PRE-TEST

Name:_____

3 Algebraic Linear Equations

Solve each equation. Show your work.

1. $2x - 0.2(4 - x) = 2.8$

$x = \frac{18}{11}$

2. $3(x + 3) - \frac{2x + 1}{2} = 0.5$

$x = -4$

3. $-\frac{x + 2}{3} - \frac{4 - 2x}{2} = \frac{1}{6}$

$x = \frac{17}{4}$

4. $3(x - 1) - 8 = 4(1 + x) + 5$

$x = -20$

5. $\frac{4x - 2}{8} + \frac{3 + x}{4} = \frac{1}{2}$

$x = 0$

Express each decimal as a fraction. Show your work.

6. $0.0\overline{6}$

$\frac{1}{15}$

7. $0.58\overline{3}$

$\frac{7}{12}$

3 Algebraic Linear Equations

Identify whether each equation has one solution, no solution, or an infinite number of solutions. Show your work.

8. $2x - \frac{1}{4} = -\frac{1}{8}(16x - 2)$

One solution, $x = \frac{1}{8}$

9. $0.5(6x - 3) = \frac{1}{2}(6 + 6x)$

No solution

10. $\frac{1}{5}(x - 5) = \frac{1}{5}x - 1$

Infinite solutions

Solve for y in terms of x. Find y when $x = 6$.

11. $0.75y = \frac{1}{4}(x - 3)$

$y = \frac{1}{3}x - 1;\ y = 1$

12. $\frac{2}{3}x - 1 = 2(y + 7)$

$y = \frac{1}{3}x - 7.5;\ y = -5\frac{1}{2}$

3 Algebraic Linear Equations

13. What should the value of p be for the equation below to have no solutions?

$p \cdot x = 5 - 10x$

✔ A) -10

B) $-\frac{1}{10}$

C) $\frac{1}{10}$

D) 10

14. How many solutions does this equation have?

$6a - 2 = 2(1 + 3a)$

✔ A) none

B) exactly one

C) exactly two

D) infinitely many

15. Solve for p.

$\frac{1}{3}(4p - 9) = 8p + 12$

A) $-\frac{15}{4}$

✔ B) $-\frac{9}{4}$

C) $\frac{9}{4}$

D) $\frac{15}{4}$

Algebraic Linear Equations

16. Solve for x.

$2.4x + 10 = 9x + 8 - 6.2x$

A) -5

B) $-\frac{1}{2}$

C) $\frac{1}{2}$

✔ D) 5

17. Which step is the first *incorrect* step in the solution shown below?

Solve: $6(x + 1) = -5x + 14$

Step 1: $6x + 6 = -5x + 14$
Step 2: $11x + 6 = 14$
Step 3: $11x = 8$
Step 4: $x = -3$

A) Step 1

B) Step 2

C) Step 3

✔ D) Step 4

18. Which step is the first *incorrect* step in the solution shown below?

Solve: $5(x + 2) = 6x + 12$

Step 1: $5x + 2 = 6x + 12$
Step 2: $-x + 2 = 12$
Step 3: $-x = 10$
Step 4: $x = -10$

✔ A) Step 1

B) Step 2

C) Step 3

D) Step 4

3 Algebraic Linear Equations

19. Which step is the first *incorrect* step in the solution shown below?

Solve: $3(x + 2) = 6x + 12$

Step 1: $3x + 6 = 6x + 12$
Step 2: $-3x + 6 = 12$
Step 3: $-3x = 18$
Step 4: $x = -6$

A) Step 1

B) Step 2

✔ C) Step 3

D) Step 4

20. Solve for x.

$$\frac{3}{2}x - 11 + x = 4x - 2$$

✔ A) -6

B) $-\frac{9}{2}$

C) 6

D) 18