Practice: U1A L2 P Solving Two-Step Equations | Name: KEY HR: ____

Directions: Solve the following equations, showing work EXACTLY as shown in class. AND give the justification for each step using the abbreviations discussed or writing them out.

Quick Review (One-Step Equations)

R1. $x - 5 = 12$ Property(s) Used:

$+5 \quad +5$

$x = 17$

+ POE

x = 17

R2. $\frac{4x}{4} = \frac{28}{4}$ Property(s) Used:

$x = 7$

÷ POE

x = 7

R3. $3 \cdot \frac{x}{3} = 6 \cdot 3$ Property(s) Used:

$x = 18$

* POE

x = 18

Two-Step Equations

1. $2x + 5 = 13$ Property Used:

$-5 \quad -5$

$\frac{2x}{2} = \frac{8}{2}$

$x = 4$

- POE

÷ POE

x = 4

2. $3x - 4 = 11$ Property Used:

$+4 \quad +4$

$\frac{3x}{3} = \frac{15}{3}$

+ POE

÷ POE

x = 5

3. $\frac{x}{2} + 6 = 10$ Property Used:

$-6 \quad -6$

$2 \cdot \frac{x}{2} = 4 \cdot 2$

$x = 8$

- POE

* POE

x = 8

4. $-3x + 7 = 1$ Property Used:

$-7 \quad -7$

$\frac{-3x}{-3} = \frac{-6}{-3}$

$x = +2$

- POE

÷ POE

x = +2

5. $5 - x = -2$ Property Used:

$-5 \quad -5$

$\frac{-x}{-1} = \frac{-7}{-1}$

$x = 7$

- POE

÷ POE

x = 7

6. $\frac{x}{4} - 3 = 2$ Property Used:

$+3 \quad +3$

$4 \cdot \frac{x}{4} = 5 \cdot 4$

$x = 20$

+ POE

* POE

x = 20

7. $\frac{2}{3}x + 1 = 5$ Property Used:

$-1 \quad -1$

$3 \cdot \frac{2}{3}x = 4 \cdot 3$

$\frac{2x}{2} = \frac{12}{2}$

- POE

* POE

÷ POE

x = 6

8. $-2x - 5 = 3$ Property Used:

$+5 \quad +5$

$\frac{-2x}{-2} = \frac{8}{-2}$

+ POE

÷ POE

x = -4

9. $\frac{x}{5} + 4 = 1$ Property Used:

$-4 \quad -4$

$5 \cdot \frac{x}{5} = -3 \cdot 5$

$x = -15$

- POE

* POE

x = -15

10. $4x - 9 = 7$ Property Used:

$+9 \quad +9$

$\frac{4x}{4} = \frac{16}{4}$

+ POE

÷ POE

x = 4

11. $\frac{3}{4}x - 2 = 7$ Property Used:

$+2 \quad +2$

$\frac{4}{3} \cdot \frac{3}{4}x = 9 \cdot \frac{4}{3}$

$x = 12$

+ POE

* POE

x = 12

12. $-\frac{x}{2} + 6 = 9$ Property Used:

$-6 \quad -6$

$-2 \cdot -\frac{x}{2} = 3 \cdot -2$

$x = -6$

- POE

* POE

x = -6

Practice: U1A L2 P Solving Two-Step Equations (back)

Name: _____ HR: ____

Solve the following problems as directed. Show your equation and all work.

13. Solve: $-3x + 8 = -4$ Property(s) Used:

$-8 \quad -8$ — POE

$\frac{-3x}{-3} = \frac{-12}{-3}$ ÷ POE

$x = 4$

Answer: 4

14. Solve: $\frac{x}{6} + 5 = 2$ Property(s) Used:

$-5 \quad -5$ — POE

$6 \cdot \frac{x}{6} = -3 \cdot 6$ * POE

$x = -18$

Answer: -18

15. Solve: $-15 = \frac{-2}{3}x - 3$ Property(s) Used:

$+3 \quad +3$ + POE

$3 \cdot -12 = -\frac{2}{3}x \cdot 3$ * POE

$\frac{-36}{-2} = \frac{-2x}{-2}$ ÷ POE

$18 = x$ symmetric

Answer: 18

16. Solve: $\frac{9}{5} = 4x - \frac{1}{5}$ Property(s) Used:

$+1/5 \quad +1/5$ + POE

$\frac{2}{4} = \frac{4x}{4}$ ÷ POE

$\frac{1}{2} = x$ symmetric

Answer: 1/2

17. Use $F = \frac{9}{5}C + 32$ to find C when F = 68 degrees.

$68 = \frac{9}{5}C + 32$

$-32 \quad -32$

$\frac{36}{5} = \frac{9}{5}C \cdot 5$

$\frac{180}{9} = \frac{9C}{9}$

C = 5 ___ $C = 20°C$

18. A phone plan costs $20 per month plus $0.10 per text. If Aisha's bill was $32, write and solve an equation to find the number of texts, t, she sent.

$\$20$ / month + $\$.10$ / text

$32 = 20 + .10t$

$12 = .10t$

$t = 120$

t = 120 ___ texts

19. A rectangle's perimeter is found using P = 2l + 2w. If P = 46 cm and w = 9 cm, find the length l.

$46 = 2l + 2(9)$

$46 = 2l + 18$

$-18 \quad -18$

$28 = 2l$

$14 = l$

l = 14 ___ cm

20. Twice a number, decreased by 9, is 15. Write and solve an equation to find the number, n.

$2n - 9 = 15$

$+9 \quad +9$

$\frac{2n}{2} = \frac{24}{2}$

$n = 12$

n = 12 ___