

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

$x + 4 = 9$ $\underline{-4 \quad -4}$ $x = 5$ POE = Property of EQUALITY Property Used: <u>- POE</u>	$2. \quad x - 3 = 6$ $\underline{+3 \quad +3}$ $x = 9$ Property Used: <u>+ POE</u>	$3. \quad \frac{6x}{6} = \frac{18}{6}$ $x = 3$ Property Used: <u>$\div$ POE</u>
$4. \quad \frac{3x}{3} = 5 \cdot 3$ $x = 15$ Property Used: <u>* POE</u>	$5. \quad x - 7 = 10$ $\underline{+7 \quad +7}$ $x = 17$ Property Used: <u>+ POE</u>	$6. \quad x + 2 = -3$ $\underline{-2 \quad -2}$ $x = -5$ Property Used: <u>- POE</u>
$7. \quad 5 = x + 1$ $\underline{-1 \quad -1}$ $4 = x$ $x = 4$ Property Used: <u>- POE</u> <u>Symmetric Prop</u>	$8. \quad 10 = x - 2$ $\underline{+2 \quad +2}$ $12 = x$ $x = 12$ Property Used: <u>+ POE</u> <u>Symmetric</u>	$9. \quad \frac{24}{6} = \frac{6x}{6}$ $4 = x$ $x = 4$ Property Used: <u>$\div$ POE</u> <u>Symmetric</u>
$10. \quad 8 = \frac{x}{2} \cdot 2$ $16 = x$ $x = 16$ Property Used: <u>* POE</u> <u>Symmetric</u>	$11. \quad -4 = x + 7$ $\underline{-7 \quad -7}$ $x = -11$ Property Used: <u>- POE</u> <u>Symmetric</u>	$12. \quad 0 = \frac{x}{5} \cdot 5$ $0 = x$ $x = 0$ Property Used: <u>* POE</u> <u>Symmetric</u>

13. $x + \frac{2}{3} = \frac{5}{3}$ $\underline{-\frac{2}{3} \quad -\frac{2}{3}}$ $x = \frac{3}{3}$ $x = \underline{1}$ Property Used: $-POE$ <i>Simplify</i>	14. $x - \frac{1}{2} = \frac{1}{4}$ $\underline{+\frac{1}{2} \quad +\frac{1}{2}}$ $\frac{1}{4}$ $\underline{+\frac{2}{4}}$ $\frac{3}{4}$ $x = \underline{\frac{3}{4}}$ Property Used: $+POE$	15. $\frac{2}{5}x = 6 \cdot 5$ $\frac{2x}{2} = \frac{30}{2}$ $x = \underline{15}$ Property Used: $\star POE$ $\div POE$
16. $\frac{x}{4} = \frac{3}{2} \cdot 4$ $x = \frac{12}{2} = 6$ $x = \underline{6}$ Property Used: $\star POE$	17. $x - \frac{7}{4} = \frac{1}{4}$ $\underline{+\frac{7}{4} \quad +\frac{7}{4}}$ $x = \underline{2}$ $x = \frac{8}{4}$ Property Used: $+POE$ <i>Simplify</i>	18. $\frac{5}{6}x = \frac{10}{3} \cdot 6^2$ $\frac{5x}{5} = \frac{20}{5}$ $x = \underline{4}$ Property Used: $\star POE$ $\div POE$

Solve the following problems as directed.

19. Evaluate: $2 \cdot 3^2 - 5(6 - 4)$ $2 \cdot 9 - 5(2)$ $18 - 10$ $\textcircled{8}$	20. Evaluate: $\frac{2^3 + 4}{4}$ $\frac{8 + 4}{4}$ $\frac{12}{4} = \textcircled{3}$	21. If $P = \frac{nRT}{V}$, determine the value of P when $n = 0.65$, $R = 0.08$, $T = 293$ and $V = 14$ $p = \frac{(0.65)(0.08)(293)}{14}$ $= 1.09$
22. Solve: $\frac{5x}{5} = \frac{110}{5}$ $\textcircled{x = 22}$	23. Solve: $\frac{3}{2}x = 18 \cdot 3$ $\frac{2x}{2} = \frac{54}{2}$ $\textcircled{x = 27}$	24. Solve: $(-32) = \frac{4x}{3} \cdot 3$ $\frac{-96}{4} = \frac{4x}{4}$ $-24 = x$ $\textcircled{x = -24}$
25. Determine the circumference of a circle with a radius of 13 inches (about the radius of a car tire). How far does a car travel in one revolution of the tire (round to 1 decimals)? Give units on answers. $C = 2\pi r = 2\pi \cdot 13$ $= 26\pi$ $= 81.7 \text{ inches}$	26. Simplify the expression: $4(x + 6) + 2x - 8$ $4x + 24 + 2x - 8$ $6x + 16$	27. Simplify: $-3(2x - 4) + 5x - 2$ $-6x + 12 + 5x - 2$ $-x + 10$ OR $10 - x$

$\sim 6 \text{ feet } 10 \text{ inches}$