Name/Date___Clee /Today_____

**ALL PROBLEMS CAN BE COMPLETED ON THIS WORKSHEET**

## WS 5A.1 – Solving Proportions

| #1-6, Solve each equation. |
|---|

**1.** $\dfrac{8}{a} \times \dfrac{16}{3}$    Fraction = Fraction
cross multiply

$16a = 24$

$a = \dfrac{24}{16}$ ⟶ $\boxed{a = \dfrac{3}{2}}$

**2.** $\dfrac{x-2}{5} = \dfrac{2x+3}{3}$

$5(2x+3) = 3(x-2)$

$10x + 15 = 3x - 6$
$\phantom{10x}{-3x}\phantom{+15} {-3x}$

$7x + 15 = -6$

$7x = -21$ ⟶ $\boxed{x = -3}$

**3.** $\dfrac{2}{n+3} = \dfrac{6}{2n-5}$

$6(n+3) = 2(2n-5)$

$6n + 18 = 4n - 10$
$-4n \phantom{+18} {-4n}$

$2n + 18 = -10$

$2n = -28$ ⟶ $\boxed{n = -14}$

**4.** $\dfrac{5}{3n+5} = \dfrac{5}{5n-2}$

$5(5n-2) = 5(3n+5)$

$25n - 10 = 15n + 25$
$-15n \phantom{-10} {-15n}$

$10n - 10 = 25$

$10n = 35$ ⟹ $\boxed{n = \dfrac{7}{2}}$

**5.** $\dfrac{2}{6x+1} = \dfrac{4}{12x+2}$

$2(12x+2) = 4(6x+1)$

$24x + 4 = 24x + 4$
$-24x \phantom{+4} {-24x}$

$4 = 4$

$\boxed{\text{All real numbers are solutions.}}$

**6.** $\dfrac{3+z}{5} = \dfrac{7z+1}{3}$

$5(7z+1) = 3(3+z)$

$35z + 5 = 9 + 3z$
$-3z \phantom{+5} {-3z}$

$32z + 5 = 9$

$32z = 4$ ⟹ $\boxed{z = \dfrac{1}{8}}$

**7.** A 52-foot building casts a shadow that is 48 feet long. At the same time, a shadow cast by a nearby lion statue is 18 feet long. How tall is the statue?

let x = height of lion statue

$\dfrac{\text{building height}}{\text{building shadow}} = \dfrac{\text{statue height}}{\text{statue shadow}}$

$\dfrac{52}{48} = \dfrac{x}{18}$ ⟶ $\dfrac{13}{12} = \dfrac{x}{18}$     $12x = 234$

$x = 19.5$

$\boxed{\text{The lion statue is 19.5 ft tall.}}$