More Practice Simplifying Roots

Name:_____

Roots

$3 \times 3 = 9$ means $\begin{cases} 3^2 = 9 \\ 3 = \sqrt{9} \end{cases}$

$\sqrt{9} = 3$ $\qquad$ $\sqrt{x^2} = x$

$\sqrt{18} = \sqrt{9 \times 2} = 3\sqrt{2}$ $\qquad$ $\sqrt{x^3} = \sqrt{\underline{x \cdot x} \cdot x} = x\sqrt{x}$

1. **(Basic)** Simplify

(A) $\sqrt{25}$

(B) $\sqrt{5 \cdot 5}$

(C) $\sqrt{5 + 5}$

(D) $\sqrt{x^4}$

(E) $\sqrt{x^2 \cdot x^2}$

(F) $\sqrt{x^2 + x^2}$

(G) $\sqrt{12}$

(H) $\sqrt{12x^5}$

(I) $\sqrt{12x^5y^3}$

2. **(Fractions)** Simplify

(A) $\sqrt{\frac{9}{25}}$

(B) $\sqrt{\frac{18}{50}}$

(C) $\sqrt{\frac{150}{24}}$

(D) $\sqrt{\frac{x^5}{x^3}}$

(E) $\sqrt{\frac{4x^3}{9x^7}}$

(F) $\sqrt{\frac{8x^3}{18x^5}}$