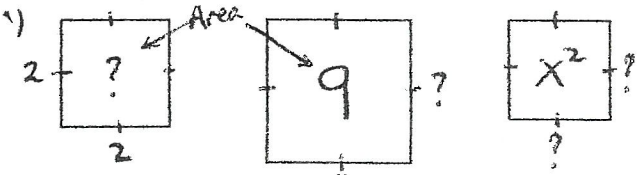
A14 page 1

Key

Iams

- Complete parts A and B below:

A) 1)



? = 4 ? = 3 ? = x

Rather than write out "What times itself is 9" we just use a symbol and write $\sqrt{9}$.

B) Use a calculator to determine if they are = or ≠.

1) $\sqrt{5 \cdot 7} = \sqrt{5} \cdot \sqrt{7}$

2) $\sqrt{\frac{8}{3}} = \frac{\sqrt{8}}{\sqrt{3}}$

3) $(\sqrt{13})^2 = 13$

4) $2\sqrt{3} + 3\sqrt{3} = 5\sqrt{3}$

5) $4\sqrt{3} + 4\sqrt{2} \neq 8\sqrt{5}$

6) $\sqrt{8} = 2\sqrt{2}$

Radical Rules

1) $\sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$

2) $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$

3) $(\sqrt{a})^2 = a$

4 and 5) you can only + or − "like" $\sqrt{\ }$s (terms with same $\sqrt{\ }$ parts)

C) Simplifying Radicals

1. No perfect squares inside $\sqrt{\ }$ (ex. 4, 9, 16, x^2, x^4y^6)
2. No fractions inside $\sqrt{\ }$
3. No $\sqrt{\ }$ in denominator

Ex 1 | $\sqrt{48}$

$\sqrt{16 \cdot 3}$ or $\sqrt{4 \cdot 12}$

$4\sqrt{3}$

$2\sqrt{12}$

$2\sqrt{4 \cdot 3}$

$2 \cdot 2\sqrt{3}$

$4\sqrt{3}$

Ex 2 | $\sqrt{\frac{3}{5} \cdot \frac{5}{5}}$

$\sqrt{\frac{15}{25}}$

$\frac{\sqrt{15}}{\sqrt{25}}$

$\frac{\sqrt{15}}{5}$

Ex 3 | $\frac{3}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}}$

$\frac{3\sqrt{5}}{\sqrt{25}}$

$\frac{3\sqrt{5}}{5}$