

9.1

1st Period

17 FEB 12

$$\begin{aligned} 1c \text{ SIMPLIFY } \sqrt{72} &= \sqrt{9 \cdot 8} = \sqrt{9} \sqrt{4} \sqrt{2} = 3 \cdot 2 \cdot \sqrt{2} = 6\sqrt{2} \\ &= \sqrt{36 \cdot 2} = \sqrt{36} \cdot \sqrt{2} = 6\sqrt{2} \end{aligned}$$

$$26 \sqrt{(4+9)} = \sqrt{13} \neq 2+3$$

$$\begin{aligned} 26 \sqrt{5^2+12^2} &\neq 5+12 \\ &= \sqrt{25+144} = \sqrt{169} = 13 \end{aligned}$$

MK?: p367 Sample Fred #3

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

$$= \frac{\sqrt{5}}{\sqrt{3}}$$
$$= \frac{\sqrt{3}}{\sqrt{3}} \left(\frac{\sqrt{5}}{\sqrt{3}} \right)$$
$$= \frac{\sqrt{15}}{3}$$

DON'T LET
RADICALS HANG
OUT IN THE BASEMENT!
(IT WILL ONLY LEAD TO TROUBLE...)

RATIONALIZE
THE DENOMINATOR

$\frac{\sqrt{15}}{3}$ MAY ALSO BE WRITTEN AS $\sqrt{15} \div 3$

$$\sqrt[3]{15} \cdot \frac{1}{3} \text{ or } \frac{1}{3} \sqrt[3]{15}$$

$$3d. \frac{6}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{6\sqrt{3}}{3} = 2\sqrt{3}$$

$$4b. \frac{7\sqrt{2}}{\sqrt{2}} + \sqrt{3} + 6\sqrt{3} + \frac{4\sqrt{2}}{\sqrt{2}} = 8\sqrt{2} + 7\sqrt{3}$$

Your turn (made up problem):

$$\frac{9\sqrt{2}}{\sqrt{2}} - 4\sqrt{11} + 3\sqrt{2} + 5\sqrt{11} = 12\sqrt{2} + 7\sqrt{11}$$

$$4d. \sqrt{72} + \sqrt{75} - \sqrt{48}$$

$$\sqrt{9} \cdot \sqrt{4} \cdot \sqrt{2} + \sqrt{25} \cdot \sqrt{3} - \sqrt{16} \cdot \sqrt{3}$$

$$3 \cdot 2 \cdot \sqrt{2} + 5\sqrt{3} - 4\sqrt{3}$$

$$6\sqrt{2} + \sqrt{3}$$

$$5d. \sqrt{x^2} = \sqrt{\frac{1}{4}}$$

Solve for x

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

$$6d. \quad x^2 + (3\sqrt{3})^2 = 36$$

$$7d \quad x^2 - 18 - 3x = 0$$

$$x^2 + (3\sqrt{3})(3\sqrt{3}) = 36$$

$$x^2 - 3x - 18 = 0$$

$$x^2 + 9 \cdot 3 = 36$$

$$(x - 6)(x + 3) = 0$$

$$x^2 + \frac{27}{-27} = \frac{36}{-27}$$

$$= \sqrt{9}$$

IF $ab=0$ then $a=0$ or $b=0$.

$$\text{IF } x-6=0 \quad \& \quad \text{IF } x+3=0$$

$$x = 6 \quad x = -3$$

$$x = \pm 3$$

Solve

8d. $5x = x^2 - 3x$

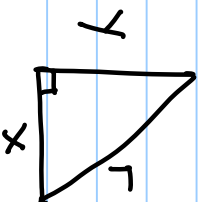
$$0 = x^2 - 3x - 5x$$

$$0 = x^2 - 8x$$

$$0 = x(x - 8)$$

$$x = 0 \text{ or } x = 8$$

9.



$$x^2 + y^2 = r^2$$

a. Let $y = 21$ & $r = 29$
Find x

$$x^2 + 21^2 = 29^2$$

$$x^2 + (20+1)(20+1) = (20+9)(20+9)$$

$$400 + 20 + 20 + 1 = 400 + 180 + 180 + 81$$

$$x^2 + 441 = 841$$

$$x = \pm 20$$

but length so $x = +20$