Warmup 8/13/19

Simplify

$\sqrt{48} - \sqrt{12} + \sqrt{3}$

$48 = 12 \cdot 4$, $12 = 4 \cdot 3$, $4 = 2 \cdot 2$

$2 \cdot 2\sqrt{3} - 2\sqrt{3}$

$4\sqrt{3} - 2\sqrt{3} + 1\sqrt{3}$

$3\sqrt{3}$

Perimeter

$14\sqrt{10}$

side length $= 3\sqrt{10}$

other length?

$3\sqrt{10}$ | $14\sqrt{10}$ | $3\sqrt{10}$

$14\sqrt{10} - 6\sqrt{10}$

$4\sqrt{10} = \frac{8\sqrt{10}}{2}$

Algebra I Name _____

0.7A Multiplying Radicals - Notes

1. **Multiply outside by outside and the answer goes outside.**
2. **Multiply inside by inside and the answer goes inside.**
3. **Then simply the inside if possible.**

1) $\sqrt{5} \cdot 4\sqrt{10}$

$4\sqrt{50}$ $5 \cdot 4\sqrt{2}$ $20\sqrt{2}$

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

$20\sqrt{6}$

3) $5\sqrt{3x} \cdot \sqrt{5x}$

$5\sqrt{15x^2}$ XX $5x\sqrt{15}$

4) $5\sqrt{5n^2} \cdot 4\sqrt{4n}$

$20\sqrt{20n^3}$ nnn $20 \cdot 2 \cdot n\sqrt{5n}$ $40n\sqrt{5n}$

5) $\sqrt{6a} \cdot -3\sqrt{6a^3}$

$-3\sqrt{36a^4}$ aaaa $-3 \cdot 6 \cdot a^2$ $-18a^2$

6) $\sqrt{3m^3} \cdot \sqrt{5m^2}$

$\sqrt{15m^5}$ mmmmm $m \cdot m\sqrt{15m}$ $m^2\sqrt{15m}$

7) $2\sqrt{6}(\sqrt{2} + 3)$ * Distribute

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

$2\sqrt{12} + 6\sqrt{6}$ type in calc

$6\sqrt{6} + 4\sqrt{3}$

8) $-\sqrt{10}(-\sqrt{10} + 3)$

$-\sqrt{10}(-\sqrt{10})$ $-\sqrt{10}(3)$

$\sqrt{100} - 3\sqrt{10}$ type in calc

$-3\sqrt{10} + 10$

9) $2\sqrt{10}(\sqrt{2}+\sqrt{5})$

10) $\sqrt{5}(4+\sqrt{10})$

11) $-2\sqrt{6r}(3\sqrt{3r}+\sqrt{5r})$

12) $-\sqrt{15m}(\sqrt{5}+\sqrt{3})$

13) The length of a rectangle is $3\sqrt{8}$. The width is $2\sqrt{5}$. Find the area of the rectangle.

14) The length of a rectangle is $\sqrt{15}$. The width is $\sqrt{5}$. Find the area of the rectangle.

Multiply low

15) The length of a rectangle is $6\sqrt{12}$. The width is $\sqrt{6}$. Find the area of the rectangle.

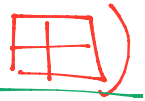
16) The length of a rectangle is $5\sqrt{3}$. The width is $\sqrt{27}$. Find the area of the rectangle.

17) The length of a rectangle is $2x\sqrt{2}$. The width is $\sqrt{10}$. Find the area of the rectangle.

18) The length of a rectangle is $4x\sqrt{3}$. The width is $8x\sqrt{6}$. Find the area of the rectangle.

Multiply

$(2\sqrt{6}-\sqrt{2})(-7\sqrt{3}+2\sqrt{5})$

(you will need a )

	$2\sqrt{6}$	$-\sqrt{2}$
$-7\sqrt{3}$	$-14\sqrt{18}$	$7\sqrt{6}$
$2\sqrt{5}$	$4\sqrt{30}$	$-2\sqrt{10}$

$-42\sqrt{2}+7\sqrt{6}+4\sqrt{30}-2\sqrt{10}$

$(3\sqrt{2}-\sqrt{3})(-5\sqrt{3}+2\sqrt{2})$

	$3\sqrt{2}$	$-\sqrt{3}$
$-5\sqrt{3}$	$-15\sqrt{6}$	$5\sqrt{9}=15$
$2\sqrt{2}$	$6\sqrt{4}=12$	$-2\sqrt{6}$

$-17\sqrt{6}+27$

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$-18a^2$

6) $\sqrt{3m^3} \cdot \sqrt{5m^2}$

$m^2\sqrt{15m}$

7) $2\sqrt{6}\left(\sqrt{2} + 3\right)$

$4\sqrt{3} + 6\sqrt{6}$

8) $-\sqrt{10}\left(-\sqrt{10} + 3\right)$

$10 - 3\sqrt{10}$

9) $2\sqrt{10}\left(\sqrt{2}+\sqrt{5}\right)$

$4\sqrt{5}+10\sqrt{2}$

10) $\sqrt{5}\left(4+\sqrt{10}\right)$

$4\sqrt{5}+5\sqrt{2}$

11) $-2\sqrt{6r}\left(3\sqrt{3r}+\sqrt{5r}\right)$

$-18r\sqrt{2}-2r\sqrt{30}$

12) $-\sqrt{15m}\left(\sqrt{5}+\sqrt{3}\right)$

$-5\sqrt{3m}-3\sqrt{5m}$

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