

(2, 14, 16, 18, 15)

$$12. \frac{6}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{6\sqrt{3}}{3} = 2\sqrt{3}$$

$$14. \frac{\sqrt{96}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{288}}{3}$$

$$\sqrt{32} = \sqrt{2^2 \cdot 2^2 \cdot 2}$$

$\begin{matrix} 8 & 4 \\ \uparrow & \uparrow \\ 2 & 2 \\ \downarrow & \downarrow \\ 2 & 2 \end{matrix}$ 
 $\downarrow$ 
 $\begin{matrix} 2 & 2 \\ \downarrow & \downarrow \\ 2 & 2 \end{matrix}$ 
 $\downarrow$ 
 $2 \cdot 2 \sqrt{2}$ 
 $\downarrow$ 
 $4\sqrt{2}$

$$15. \sqrt{30} \cdot \sqrt{42}$$

$$\sqrt{30 \cdot 42} = 2 \cdot 3 \sqrt{5 \cdot 7}$$

$\begin{matrix} 3 & 10 & 2 & 21 \\ \uparrow & \uparrow & \uparrow & \uparrow \\ 2 & 5 & 3 & 7 \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 2 & 5 & 3 & 7 \end{matrix}$ 
 $\downarrow$ 
 $6\sqrt{35}$

$$16. \sqrt{35} \cdot \sqrt{21}$$

$$\sqrt{35 \cdot 21} = 7\sqrt{15}$$

$\begin{matrix} 5 & 7 & 7 & 3 \\ \uparrow & \uparrow & \uparrow & \uparrow \\ 5 & 7 & 7 & 3 \end{matrix}$ 
 $\downarrow$ 
 $\sqrt{7^2 \cdot 5 \cdot 3} = 7\sqrt{15}$

$$18. \sqrt{15} \cdot \sqrt{\frac{3}{5}} = \sqrt{\frac{15 \cdot 3}{5}} = \sqrt{\frac{45}{5}}$$

$$\sqrt{9} = 3$$

3/6/10

13. 
$$\frac{\sqrt{270}}{\sqrt{6}}$$

Simplify. SHOW WORK!

## EXAM REVIEW

$$1. (3y - 2) - (-4y + 8)$$

$$\rightarrow 3y + 4y - 2 - 8 = 7y - 10$$

$$\rightarrow 3y - 2 + 4y - 8 = \boxed{7y - 10}$$

$$6. (2x - 5)(x^2 - 3x + 4)$$

$$2x^3 - 6x^2 + 8x - 5x^2 + 15x - 20$$

$$\boxed{2x^3 - 11x^2 + 23x - 20}$$

$$8. (2ab - 2)^2$$

$$(2ab - 2)(2ab - 2)$$

$$4a^2b^2 - 4ab - 4ab + 4$$

$$4a^2b^2 - 8ab + 4$$

$$15. \frac{2x^2}{y^3} \left( \frac{-y^3}{2x^2} \right)^2$$

$$\frac{2x^2}{y^3} \cdot \frac{y^6}{4x^4} = \frac{2x^2 y^6}{4x^4 y^3} = \frac{y^3}{2x^2}$$

$$19. \left( \frac{2}{h^2 k^{-3}} \right)^{-2} = \frac{2^{-2}}{h^{-4} k^6} = \frac{h^4}{2^2 k^6}$$

$$\frac{h^4}{4k^6}$$

$$23. \frac{8x^2 - 6x}{4x^2}$$

$$\frac{\cancel{2x}(4x - 3)}{\cancel{2}4x^2} = \frac{4x - 3}{2x}$$

$$53. f(x) = \frac{x+5}{x^2+2x-15}$$

$$f(x) = \frac{\cancel{x+5}}{(x-3)\cancel{(x+5)}}$$

$$\text{Asym: } x-3=0 \quad \text{Hole: } x+5=0$$
$$x=3 \quad \quad \quad x=-5$$