

SECTION 4: SIMPLIFY

21. $\sqrt{72m^6}$

$$\sqrt{36m^6} \sqrt{2}$$

$$\boxed{6m^3\sqrt{2}}$$

22. $7\sqrt{6} - 2\sqrt{12} + \sqrt{24}$

$$7\sqrt{6} - 2\sqrt{4}\sqrt{3} + \sqrt{4}\sqrt{6}$$

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

$$7\sqrt{6} - 4\sqrt{3} + 2\sqrt{3}$$

$$\boxed{7\sqrt{6} - 2\sqrt{3}}$$

23. $\sqrt{3}(7 - \sqrt{15})$

$$7\sqrt{3} - \sqrt{45}$$

$$7\sqrt{3} - \sqrt{9}\sqrt{5}$$

$$\boxed{7\sqrt{3} - 3\sqrt{5}}$$

PERFORM the INDICATED OPERATION. SIMPLIFY the result completely.

24. $\frac{20x^5}{y^2} \cdot \frac{x^2y^2}{10x^3}$

$$= \frac{20x^7y^2}{10x^3y^2}$$

$$= \boxed{2x^4}$$

25. $\frac{5 \cdot 4}{5 \cdot 3x} + \frac{2 \cdot 3}{5x \cdot 3}$

$$\frac{20}{15x} + \frac{6}{15x}$$

$$\boxed{\frac{26}{15x}}$$

26. $\frac{8x-1}{x^2+x-6} - \frac{4(x+3)}{(x-2)(x+3)}$

$$\frac{(8x-1)}{(x+3)(x-2)} - \frac{(4x+12)}{(x-2)(x+3)}$$

$$\frac{8x-1-4x-12}{(x+3)(x-2)} = \boxed{\frac{4x-13}{(x+3)(x-2)}}$$

27. $\frac{r^2-9r+18}{r^2+11r+30} \cdot \frac{r+5}{r^2-36}$

$$\frac{(r-6)(r-3)}{(r+6)(r+5)} \cdot \frac{(r+5)}{(r+6)(r-6)}$$

$$\boxed{\frac{r-3}{(r+6)^2}}$$

28. $\frac{x^2-9x}{x+3} \div (x^2-6x-27)$

$$\frac{x(x-9)}{(x+3)} \cdot \frac{1}{(x-9)(x+3)} = \boxed{\frac{x}{(x+3)^2}}$$