POLYNOMIALS — many-termed expression

$$x^4 - 3x^3 + 2x^2 - x + 7$$

$$5x^9$$

$$2x + 7$$

No $\quad 5x^7 - 3x^2 + \dfrac{2}{x}s - 4$

$\qquad\qquad\qquad 2x^{-s}$

Yes $\quad 8x^{10} - 5$

powers are whole numbers

$$3x^3 + 2x^2 - 5x^7 + x^4 - 2$$

Standard form

$$-5x^7 + x^4 + 3x^3 + 2x^2 - 2$$

Degree: 7th

Leading coeff. $= -5$

Addition/Subtraction

$$(p^3 + 3p^2 - 4) + (-5p^4 + 2p^3 + -5p + 3)$$

$$= -5p^4 + 3p^3 + 3p^2 - 5p - 7$$

Multiplication

$$(2m-5)^2 (3m+4)$$

$$(2m-5)(2m-5)(3m+4)$$

$$(4m^2 - 10m - 10m + 25)(3m+4)$$

$$(4m^2 - 20m + 25)(3m+4)$$

$$2 \cdot 2m \cdot -5$$

$$= 12m^3 - 60m^2 + 75m + 16m^2 - 80m + 100$$

$$= \boxed{12m^3 - 44m^2 - 5m + 100}$$

Find the conjugate of $3x-5$ & then multiply the quantities.

$$(3x-5)(3x+5) = 9x^2 + 15x - 15x - 25$$
$$= \boxed{9x^2 - 25}$$

SQUARE ROOTS

$$\sqrt{45} + 2\sqrt{20}$$
$$9 \cdot 5 \qquad \cdot 2 \quad 4 \cdot 5$$
$$3\sqrt{5} + 4\sqrt{5} = \boxed{7\sqrt{5}}$$

$$\frac{30}{\sqrt{50}} = \sqrt{25 \cdot 2}$$

Rationalizing
the
Denom.

$$\frac{30^6}{5\sqrt{2}} = \frac{6}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \sqrt{4}$$

$$= \frac{6\sqrt{2}}{2} = \boxed{3\sqrt{2}}$$

$$\frac{4-2\sqrt{7}}{5+3\sqrt{7}} \cdot \frac{(5-3\sqrt{7})}{(5-3\sqrt{7})} \leftarrow \text{conjugate}$$

$$\boxed{\frac{-1}{2} = \frac{1}{-2}}$$

$$= \frac{20 - 12\sqrt{7} - 10\sqrt{7} + 6 \cdot 7}{25 - 9\sqrt{7} \cdot 7}$$

$$25 - 63$$

$$\frac{-62 + 22\sqrt{7}}{+38}$$

$$= \boxed{\frac{-31 + 11\sqrt{7}}{19}}$$