

• Multiply

$$5x \cdot 3x^2 = 15x^{(1+2)} = 15x^3$$

★ 1st property of exponents

webassign #7.

$$y^2(7y^2 + 4y - 7) = 7y^{(2+2)} + 4y^{(2+1)} - 7y^2 = 7y^4 + 4y^3 - 7y^2$$

★ distributive property

#8.

$$(8 - 4.5y)(9y^3)$$

$$= 8 \cdot 9y^3 - 4.5 \cdot 9 \cdot y^{1+3}$$

$$= 72y^3 - 40.5y^4$$

$$= -40.5y^4 + 72y^3$$

↔ standard form.

• Multiply two binomials : F.O.I.L.

#9

$$(x-2)(x+13)$$

$$= x^2 - 2x + 13x - 26$$

$$= x^2 + 11x - 26$$

$$(x-2)(x+13)$$

$$= x^2 + (-2+13)x + (-2)(13)$$

$$= x^2 + 11x - 26$$

#11

$$(2a+5b)(2a-5b) = (2a)^2 - (5b)^2 = 4a^2 - 25b^2$$

$$= 4a^2 - \cancel{10ab} + \cancel{10ab} - 25b^2$$

$$= 4a^2 - 25b^2$$

↑
factoring the difference of
two squares. $a^2 - b^2 = (a+b)(a-b)$

#12.

$$\begin{aligned}(4x+6)^2 &= (4x+6) \cdot (4x+6) \\ &= (4x) \cdot (4x) + (4x) \cdot 6 + (6) \cdot (4x) + 6 \cdot 6 \\ &= 16x^2 + 24x + 24x + 36 \\ &= 16x^2 + 48x + 36\end{aligned}$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

* a binomial squared is actually a f.o.i.l. problem

#16.

$$\begin{aligned}(x^2 - x + 7)(x^2 + x + 7) &= x^4 + \cancel{x^3} + 7x^2 \\ &\quad - \cancel{x^3} - x^2 - \cancel{7x} \\ &\quad + 7x^2 + \cancel{7x} + 49 \\ \hline &x^4 \quad 13x^2 \quad + 49\end{aligned}$$

$$\begin{aligned}(x^2 - x + 7)(x^2 + x + 7) &= [(x^2 + 7) - x][(x^2 + 7) + x] \\ &= (x^2 + 7)^2 - x^2 \\ &= x^4 + 14x^2 + 49 - x^2 \\ &= x^4 + 13x^2 + 49\end{aligned}$$

Quiz #5.

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