Warm Up February 22, 2019

Simplify the polynomial expressions:

1.) $(x - 4)^2$

$(x-4)(x-4)$

$x^2-8x+16$

2.) $(3x + y^2)^2$

$(3x+y^2)(3x+y^2)$

	$3x$	$+y^2$
$3x$	$9x^2$	$3xy^2$
$+y^2$	$3xy^2$	y^4

$9x^2+6xy^2+y^4$

Write the equation of a line given the following information:

$\hookrightarrow y=mx+b$

3.) X-Intercept : (4,0)

Y-Intercept: (0, -1) $\rightarrow b$

Hint: Find the slope first.

$m=\frac{-1-0}{0-4}=\frac{-1}{-4}$

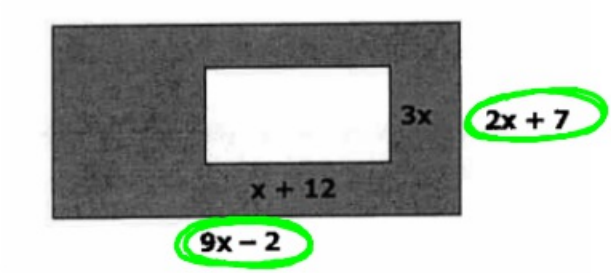
$m=\frac{1}{4}$ $y=\frac{1}{4}x-1$

4.)

x 0	y 7	
1	11	+4
2	15	+4
3	19	+4
4	23	+4
5	27	+4
+1	+1	+1

$m=4$ $y=4x+7$

$b=7$



$\text{Area}_{\text{shaded}} = \text{Area}_{\text{big}} - \text{Area}_{\text{small}}$

$(9x-2)(2x+7) - (3x)(x+12)$

F: $9x \cdot 2x = 18x^2$ $\quad 3x \cdot x = 3x^2$

O: $9x \cdot 7 = 63x$ $\quad 3x \cdot 12 = 36x$

I: $-2 \cdot 2x = -4x$

L: $-2 \cdot 7 = -14$

$18x^2 + 59x - 14 - (3x^2 + 36x)$

$18x^2 + 59x - 14 - 3x^2 - 36x$

$15x^2 + 23x - 14$

Go Go Power Ru-ule!

Powers of Monomials

Example: $(4x^3)^2$

- **Step 1:** Raise the coefficients to the outer exponent
- **Step 2:** Use the **POWER RULE** to simplify the exponents.

POWER RULE:

$(x^a)^b = x^{ab}$

EASY

1. $(x^2)^5$

$(1)^5(x^2)^5 = x^{10}$

2. $(cd^2)^3$

$(1)^3(c^1)^3(d^2)^3$

c^3d^6

3. $-4(mn^4)^3$

$-4 \cdot (m^1)^3(n^4)^3$

$-4m^3n^{12}$

4. $(2x^2y)^5$

$(2)^5(x^2)^5(y^1)^5$

$32x^{10}y^5$

MEDIUM

7. $(-2a^4b^6)^2$

$(-2)^2(a^4)^2(b^6)^2$

$4a^8b^{12}$

8. $(-5x^3y^4)^2$

$(-5)^2(x^3)^2(y^4)^2$

$25x^6y^8$

9. $(x^3y^3)^3 \cdot xy^2$

$(1)^3(x^3)^3(y^3)^3 \cdot xy^2$

$x^9y^9 \cdot xy^2$

$x^{10}y^{11}$

10. $a^3 \cdot (a^2b)^4$

$a^3 \cdot (a^2)^4(b)^4$

$a^3 \cdot a^8b^4$

$a^{11}b^4$

HARD

13. $(2a^2)^3 + (a^4)(3a^2)$

$(2)^3(a^2)^3 + 3a^6$

$8a^6 + 3a^6$

$11a^6$

14. $(3x^3y)^4 - (7x^5y)^2 \cdot x^2y^2$

$(3)^4(x^3)^4(y)^4 - (7)^2(x^5)^2(y)^2$

$81x^{12}y^4 - 49x^{10}y^2 \cdot x^2y^2$

$81x^{12}y^4 - 49x^{12}y^4$

$32x^{12}y^4$