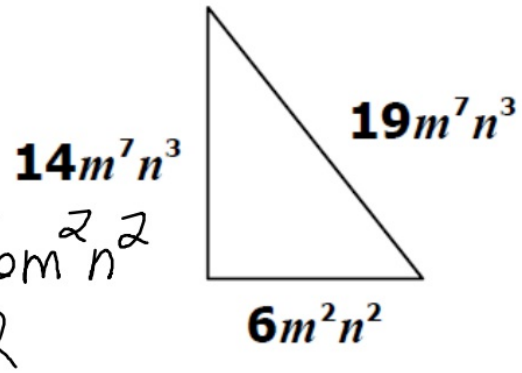
Bellwork: Algebra

1. Write down your homework for the night in your planner.
2. Take out your homework from last night and be ready for me to check it.
3. Take out your Math Nation book so I can check topics 1 and 4.
4. Turn in your test corrections stapled to your bubble sheet.
4. Answer the following question on your bellwork in the TUESDAY box:

Write the perimeter and area of the figure below as a simplified expression.



ALSO: HAPPY PALINDROME WEEK!

$P = 14m^7n^3 + 19m^7n^3 + 6m^2n^2$

$33m^7n^3 + 6m^2n^2$

$A = 6m^2n^2 \cdot 14m^7n^3 \div 2$

$84m^9n^5 \div 2 = 42m^9n^5$

1. $3a^3b^2 - 5a^3b^2$

$= -2a^3b^2$

2. $5xy - 2x^2y + 2xy$

$= -2x^2y + 7xy$

3. Subtract $-2w$ from $-6w$

$-6w - (-2w)$

$= -4w$

4. $a^4 \cdot a^3$

$= a^7$

5. $(-x^5)^2$

$= x^{10}$

6. $\frac{k^9}{k^5}$

$= k^4$

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

$= 15x^7$

8. $(-2x^2y)^2 \cdot (-3xy^3)$

$4x^4y^2 \cdot -3xy^3$

$= -12x^5y^5$

9. $2a^{-5}b^6 \cdot 5a^2b^2$

$10a^{-3}b^8$

$= \frac{10b^8}{a^3}$

10. $(-4y^4)^2$

$= 16y^8$

11. $(a^2bc^3)^4 \cdot (b^2c)^3$

$a^8b^4c^{12} \cdot b^6c^3$

$= a^8b^{10}c^{15}$

12. $(6cd^{-1})^{-3}$

$\frac{1}{216} c^{-3}d^3$

$= \frac{d^3}{216c^3}$

13. $(4a)^{-3} \cdot a^{-4}$

$\frac{1}{64} a^{-3} \cdot a^{-4}$

$= \frac{1}{64a^7}$

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

$9x^2y^2 \cdot -64x^9y^6$

$= -576x^{11}y^8$

15. $(4a^{-1}b^5c^{-3})^3$

$64a^{-3}b^{15}c^{-9}$

$= \frac{64b^{15}}{a^3c^9}$

16. $\frac{9d^8}{3d^{10}}$

$3d^{-2}$

$= \frac{3}{d^2}$

17. $\frac{6a^5b^2}{4ab^3}$

$\frac{3}{2} a^4b^{-1}$

$= \frac{3a^4}{2b}$

18. $\frac{32x^3y^2z^5}{-8xyz^2}$

$= -4x^2yz^3$

19. $\frac{(2y^5)^4}{10y^{15}}$

$\frac{16y^{20}}{10y^{15}}$

$= \boxed{\frac{8}{5}y^5}$

20. $\left(\frac{3x^5y^3}{x^3y^6}\right)^4$

$\frac{81x^{20}y^{12}}{x^{12}y^{24}}$

$= \boxed{\frac{81x^8}{y^{12}}}$

21. $\frac{(-6a^5b)^2}{12a^7b} - 8a^3b$

$\frac{36a^{10}b^2}{12a^7b} - 8a^3b$

$= \boxed{-5a^3b}$

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Name	Rule	Examples
ADDING & SUBTRACTING MONOMIALS	**COMBINE LIKE TERMS!!!** (DO NOT CHANGE common variables and exponents!)	**1.** $9x^2y - 10x^2y =$ $-1x^2y$ **2.** Subtract $6w$ from $8w$. $8w - 6w = 2w$
PRODUCT RULE	$x^a \cdot x^b = x^{a+b}$	**1.** $h^2 \cdot h^6 =$ h^8 **2.** $(-2a^2b^1) \cdot (7a^3b^1) =$ $-14a^5b^2$
POWER RULE	$(x^a)^b = x^{a \cdot b}$	**1.** $(x^2)^3 =$ x^6 **2.** $(-2m^5)^2 \cdot m^3 =$ $4m^{10} \cdot m^3 = 4m^{13}$

QUOTIENT RULE	$\frac{x^a}{x^b} = x^{a-b}$	**1.** $\frac{27x^5}{42x^1} = \frac{27}{42}x^4$ **2.** $\frac{(y^2)^2}{y^4} = \frac{y^4}{y^4} = 1 = y^0$
NEGATIVE EXPONENT RULE	$x^{-a} = \frac{1}{x^a}$	**1.** $-5x^{-2} = \frac{-5}{x^2}$ **2.** $\frac{4k^2}{8k^5} = k^{-3}$ $\frac{4}{8k^3}$
ZERO EXPONENT RULE	$x^0 = 1$	**1.** $7x^0 = 7$ **2.** $\frac{(w^4)^2}{w^8} = \frac{w^8}{w^8} = 1$

$(-5x)^{-2}$

$(7x)^0$