

Homework #2

First & Last Name: _____

Class: _____

For homework to be graded, it must be *fully completed*. This means you must **show your work**.

1. Rewrite the following expressions in the form b^n .

a. $\frac{y^{10}}{y^{22}}$ b. $\frac{7^{-6}}{7^{11}}$ c. $\frac{t^3}{t^7}$ d. $(5^{-1})(5^5)$ e. $z^{-2} \cdot z^{-17}$ f. [Challenge] $(2^{-4})(4^{-2})$

2. Rewrite the following radical expressions in exponential form.

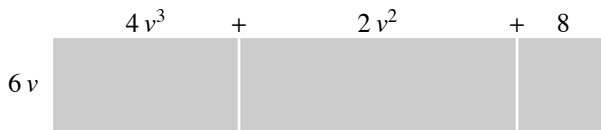
a. $\sqrt{t^{12}}$ b. $\sqrt[3]{x^3}$ c. $\sqrt[4]{1/p^3}$ d. $\sqrt[6]{(y/x)^{12}}$

3. $M = -6f^6 + 3f^3g^3 - 4g^6$ and $N = 4f^6 - 5f^3g^3 - 3g^6$.

- What is $M + M$?
- What is $M + N$?
- What is $M - N$?
- What is $N - M$?
- [Challenge] What is $3N - 3M$? Hint: Use a previous result.

4. Find the values for c and d that would make the following equation true: $(cx^6)(11x^d) = 121x^4$.

5. Express the area of the entire rectangle (your answer should be a polynomial in standard form).



6. Expand (your answer should be a polynomial in standard form).

a. $3(p^3 - p^2q + q^3)$
 b. $-2g^4(3h + 3g^3h - 5g)$

7. Expand and simplify (your answer should be a polynomial in standard form).

a. $(3h + 1)(5h^3 - 6h^2 + 2)$
 b. $(7b^3 - 3)(-5b^4 + 1)$

8. [Challenge] What is the greatest common factor of $13ab$ and $9a^5$?

9. [Challenge] Factor $x^2 + 8x + 12$ as the product of two binomials.

10. [Challenge] Factor $q^{16} + 8q^8 + 15$ completely.

11. [Challenge] The square below has an area of $16 - 8x + x^2$. What expression represents the length of one side of the square?

