Arithmetic with Polynomials - Worksheet 4
Answer Key

Complete the following identities.

1. $\frac{a^2+2ab+b^2}{a+b} =$

    $a + b$ when $a \neq -b$.

2. $\frac{a^2-b^2}{a+b} =$

    $a - b$ when $a \neq -b$.

3. $(x - y)(x^2 + xy + y^2) =$

    $x^3 - y^3 = (x - y)(x^2 + xy + y^2)$

4. $(x + y)(x^2 - xy + y^2) =$

    $x^3 + y^3 = (x + y)(x^2 - xy + y^2)$

5. $x^4 - y^4 =$

    $x^4 - y^4 = (x - y)(x + y)(x^2 + y^2)$

6. $(a - b)(a + b) + 2b^2 =$

    $(a - b)(a + b) + 2b^2 = a^2 + b^2$.

7. $\frac{x^{n+1}}{x} =$

    $\frac{x^{n+1}}{x} = x^n$.

8. $(a - b)^3 =$

    $(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$.

9. $(a + b)^3 =$
    $(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$.

10. $\sqrt{a} + \sqrt{b} =$
    $\sqrt{a} + \sqrt{b} = \frac{a-b}{\sqrt{a}-\sqrt{b}}$.