# Practice Test for Polynomial Unit

**Learning Objectives:**

1. Simplify expressions using exponents.
2. Identify whether an equation is an identity.
3. Add and subtract polynomial functions.
4. Multiply polynomial functions.
5. Factor polynomials using GCF or grouping.
6. Factor trinomials.
7. Factor a difference of squares.
8. Factor a sum or difference of cubes.
9. Solve a factorable polynomial equation.

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| **Question #** | **Learning Objective** | **Know It** | **Feel Unsure** |  | **Right** | **Wrong** | **Simple Mistake** | **Need to Study** |
| 1 | A |  |  |  |  |  |  |  |
| 2 | B |  |  |  |  |  |  |  |
| 3 | C |  |  |  |  |  |  |  |
| 4 | D |  |  |  |  |  |  |  |
| 5 | E |  |  |  |  |  |  |  |
| 6 | E |  |  |  |  |  |  |  |
| 7 | F |  |  |  |  |  |  |  |
| 8 | G |  |  |  |  |  |  |  |
| 9 | H |  |  |  |  |  |  |  |
| 10 | I |  |  |  |  |  |  |  |

1. Simplify: $\left(3x^{2}yz^{3}\right)^{2}(-4xyz^{5})^{3}$
2. Which of these equations are identities? How do you know?

 a) $\left(x+3\right)^{2}=x^{2}+9$ b)$ x^{2}-9=\left(x+3\right)(x-3)$ c) $2\left(x-3\right)=2x+6$

1. Given $f\left(x\right)=5x^{4}-3x^{3}+5x-3$ and $g\left(x\right)=2x^{4}+6x^{2}-7x-3$, find $f\left(x\right)+g(x)$and $f\left(x\right)-g(x)$.
2. Given $f\left(x\right)=3x+4$ and $g\left(x\right)=x^{2}-3x-7$, find $f\left(x\right)∙g(x)$.
3. Factor: $3x^{2}yz^{3}-12xy^{4}z^{3}$
4. Factor: $4x^{3}-12x^{2}-5x+15$
5. Factor each trinomial: a) $x^{2}-3x-88$ b) $3x^{2}+16x+5$ c) $8x^{2}-2x-3$
6. Factor: $9x^{4}-64y^{2}$
7. Factor: $64x^{3}+1$
8. Solve the equation: $3x^{2}+13x=10$