



## Polynomial Algebra - Difference of Exponents (Variables) Divided by Second Exponent - Simplify

1 What does this expression simplify to?

$$\frac{z^{2009} + z^{2008}}{z^{2008}}$$

- |   |                  |   |             |
|---|------------------|---|-------------|
| A | $(z + 1)(z - 1)$ | B | $z + 1$     |
| C | $z - 1$          | D | $(z + 1)^2$ |

2 What does this expression simplify to?

$$\frac{y^{2028} + y^{2027}}{y^{2027}}$$

- |   |             |   |                  |
|---|-------------|---|------------------|
| A | $y - 1$     | B | $(y + 1)(y - 1)$ |
| C | $(y + 1)^2$ | D | $y + 1$          |

3 What does this expression simplify to?

$$\frac{p^{2001} + p^{2000}}{p^{2000}}$$

- |   |                  |   |         |
|---|------------------|---|---------|
| A | $(p + 1)(p - 1)$ | B | $p + 1$ |
| C | $(p + 1)^2$      | D | $p - 1$ |

4 What does this expression simplify to?

$$\frac{x^{2009} - x^{2008}}{x^{2008}}$$

- |   |                  |   |         |
|---|------------------|---|---------|
| A | $(x + 1)^2$      | B | $x + 1$ |
| C | $(x + 1)(x - 1)$ | D | $x - 1$ |

5 What does this expression simplify to?

$$\frac{p^{2006} - p^{2005}}{p^{2005}}$$

- |   |                  |   |             |
|---|------------------|---|-------------|
| A | $(p + 1)(p - 1)$ | B | $p + 1$     |
| C | $p - 1$          | D | $(p + 1)^2$ |

6 What does this expression simplify to?

$$\frac{z^{2024} + z^{2023}}{z^{2023}}$$

- |   |             |   |                  |
|---|-------------|---|------------------|
| A | $z - 1$     | B | $(z + 1)(z - 1)$ |
| C | $(z + 1)^2$ | D | $z + 1$          |

7 What does this expression simplify to?

$$\frac{w^{2018} - w^{2017}}{w^{2017}}$$

- |   |                  |   |         |
|---|------------------|---|---------|
| A | $(w + 1)(w - 1)$ | B | $w - 1$ |
| C | $(w + 1)^2$      | D | $w + 1$ |

8 What does this expression simplify to?

$$\frac{n^{2025} + n^{2024}}{n^{2024}}$$

- |   |                  |   |             |
|---|------------------|---|-------------|
| A | $(n + 1)(n - 1)$ | B | $(n + 1)^2$ |
| C | $n + 1$          | D | $n - 1$     |