

Name : _____

Single-variable: S1

Multiplying Polynomials

Multiply the polynomials.

1) $(1 + 3a^5)(17a^2 + 9a^6 - 20)$

2) $(5g^2 + 1 + 2g^4 + 3g^6)(6g^2 + 2)$

3) $(-3m^2 - 3m)(-3m^4 + 3m^3 + m^2 + m)$

4) $(-2p - 4p^2 - 8p^3)(-10p^3 + 5p^2)$

5) $(2s^2 + 12 + 2s)\left(\frac{1}{2}s - \frac{1}{2}\right)$

6) $\left(u^3 - \frac{5}{6}u^4\right)\left(-\frac{3}{2}u^5 - u^4 - 6u^3 + 18\right)$

7) $(1 + x^2 + x^6 + x^4)(-x^2 + 1)$

8) $(-3r^3 - 3r)(r^5 - 30 - r^3)$

Name : _____

Answer key

Single-variable: S1

Multiplying Polynomials

Multiply the polynomials.

1) $(1 + 3a^5)(17a^2 + 9a^6 - 20)$

$$27a^{11} + 51a^7 + 9a^6 - 60a^5 + 17a^2 - 20$$

2) $(5g^2 + 1 + 2g^4 + 3g^6)(6g^2 + 2)$

$$18g^8 + 18g^6 + 34g^4 + 16g^2 + 2$$

3) $(-3m^2 - 3m)(-3m^4 + 3m^3 + m^2 + m)$

$$9m^6 - 12m^4 - 6m^3 - 3m^2$$

4) $(-2p - 4p^2 - 8p^3)(-10p^3 + 5p^2)$

$$80p^6 - 10p^3$$

5) $(2s^2 + 12 + 2s)\left(\frac{1}{2}s - \frac{1}{2}\right)$

$$s^3 + 5s - 6$$

6) $\left(u^3 - \frac{5}{6}u^4\right)\left(-\frac{3}{2}u^5 - u^4 - 6u^3 + 18\right)$

$$\frac{5}{4}u^9 - \frac{2}{3}u^8 + 4u^7 - 6u^6 - 15u^4 + 18u^3$$

7) $(1 + x^2 + x^6 + x^4)(-x^2 + 1)$

$$-x^8 + 1$$

8) $(-3r^3 - 3r)(r^5 - 30 - r^3)$

$$-3r^8 + 3r^4 + 90r^3 + 90r$$