

Name : _____

Answer key

Simplify: Multi-variable Expressions

MS3

Simplify each expression.

1) $7m - 9n^2 - (-3n^2 + 8m + 1) + 15$

$-m - 6n^2 + 14$

2) $\frac{1}{4}(4x^2y^2 + 5xyz + 3x^2y^2 - xyz + x^2y^2)$

$2x^2y^2 + xyz$

3) $a - 2(b - c) + 5(a - b + c) - 2(a - b + c) + 2(a - b + c) + 4(uv - u^2v^2)$

$6a + 3b - 3c -$

5) $p - 5q^2 - 7 - (p - 5q^2 - 7) + 1 - s^2 + st + 8$

$-12q^2 + 1$

7) $\frac{1}{5}(3yz + 4(2yz - vw) - 3vw) - 7v^3w^3 - vw - (2vw)^3$

$3yz - 8y$

$8vw - 4vw$

9) $a^3b^3 + 7abc - (9a^3b^3 - 4 + 15)$

$-8a^3b^3 + 7abc - 11$

10) $\frac{1}{2}(-9p^2q^2r^2 + 7qr^4 - 5qr^4 - 3p^2q^2r^2)$

$qr^4 - 6p^2q^2r^2$

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