

Name : \_\_\_\_\_

## Simplify: Multi-variable Expressions

MS3

Simplify each expression.

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

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

3)  $a - 2(b - c) + 5d - 3e - 4f + 2g - 3h + 2i - 2j + k^2v^2 + 4(uv - u^2v^2)$

5)  $p - 5q^2 - 7 - (r - 2s + 3t) + 4u - 6v + 7w - 8x + 9y - 10z + 11 - s^2 + st + 8$

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

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

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

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