

Polynomial Practice

Date _____ Period _____

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Simplify each expression.

1) $(7 - a) - (3a + 7)$

2) $(2b^4 + 2b^3 + 6b) + (5b^4 - b)$

3) $(6n + 5n^2 - 7n^4) - (8n^2 + 2n + 4n^4)$

4) $(4x^3 - 7x^4 + 3x) - (3x + 2x^3 + x^4)$

5) $(3 + x^3 + 7x^2 - x) + (2x^2 - 8)$

6) $(6v^2 - 8v + 6 - 3v^3) - (7v - 3v^4 + 2v^3 - 7v^2)$

7) $(7n^2 - 5n^3) - (7 + n^3 - n) + (5n^3 + 3n^2)$

8) $(x^2 + 6x + 6x^4 - 3x^3) + (x^2 + x^3 + 7x - 8) - (3 - 5x^3 - 3x + 5x^2)$

9) $(3y^4 - 2x^2y^2) - (8y^4 - 2x^2y^2)$

10) $(5u^3v + 3u^3 + 8u^4v^2) + (8u^4v^2 + 5u^3)$

11) $(6ab^3 - b - 6a^3b) - (8b + 2ab^3 - 8a^3b)$

$$12) (2x^2y^4 + 4xy^2 + 4x^2) - (5x^2y^4 - 6x^2) + (7xy^2 + 3x^2)$$

$$13) (3n + 4n^4 - 3m^4n^4 - 5m^2n^2) - (7 + 5n^4 + m^4n - 8m^2n^2) + (6m^4n^3 - 7n - 5m^4n + 5m^2n^2)$$

Find each product.

$$14) 7n(n - 5)$$

$$15) 7(3k - 7)$$

$$16) (4x + 5)(7x + 1)$$

$$17) (6n^2 - 3n + 4)(8n + 1)$$

$$18) (3m^2 + 3m + 8)(8m - 4)$$

$$19) -(4u + v)$$

$$20) 3(7x - 4y)$$

$$21) (8a + 2b)(-7a + 3b)$$

$$22) (3x + 7y)(-7x - y)$$

$$23) (8a^2 - 5ab + b^2)(-6a + 7b)$$

$$24) (7m^2 - 2mn - n^2)^2$$

$$25) (-5x^2 - 5xy - y^2)(6x^2 + 7xy - y^2)$$

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Simplify each expression.

1) $(7 - a) - (3a + 7)$

$-4a$

2) $(2b^4 + 2b^3 + 6b) + (5b^4 - b)$

$7b^4 + 2b^3 + 5b$

3) $(6n + 5n^2 - 7n^4) - (8n^2 + 2n + 4n^4)$

$-11n^4 - 3n^2 + 4n$

4) $(4x^3 - 7x^4 + 3x) - (3x + 2x^3 + x^4)$

$-8x^4 + 2x^3$

5) $(3 + x^3 + 7x^2 - x) + (2x^2 - 8)$

$x^3 + 9x^2 - x - 5$

6) $(6v^2 - 8v + 6 - 3v^3) - (7v - 3v^4 + 2v^3 - 7v^2)$

$3v^4 - 5v^3 + 13v^2 - 15v + 6$

7) $(7n^2 - 5n^3) - (7 + n^3 - n) + (5n^3 + 3n^2)$

$-n^3 + 10n^2 + n - 7$

8) $(x^2 + 6x + 6x^4 - 3x^3) + (x^2 + x^3 + 7x - 8) - (3 - 5x^3 - 3x + 5x^2)$

$6x^4 + 3x^3 - 3x^2 + 16x - 11$

9) $(3y^4 - 2x^2y^2) - (8y^4 - 2x^2y^2)$

$-5y^4$

10) $(5u^3v + 3u^3 + 8u^4v^2) + (8u^4v^2 + 5u^3)$

$16u^4v^2 + 5u^3v + 8u^3$

11) $(6ab^3 - b - 6a^3b) - (8b + 2ab^3 - 8a^3b)$

$4ab^3 + 2a^3b - 9b$

$$12) (2x^2y^4 + 4xy^2 + 4x^2) - (5x^2y^4 - 6x^2) + (7xy^2 + 3x^2)$$

$$-3x^2y^4 + 11xy^2 + 13x^2$$

$$13) (3n + 4n^4 - 3m^4n^4 - 5m^2n^2) - (7 + 5n^4 + m^4n - 8m^2n^2) + (6m^4n^3 - 7n - 5m^4n + 5m^2n^2)$$

$$-3m^4n^4 + 6m^4n^3 - 6m^4n + 8m^2n^2 - n^4 - 4n - 7$$

Find each product.

$$14) 7n(n - 5)$$

$$7n^2 - 35n$$

$$15) 7(3k - 7)$$

$$21k - 49$$

$$16) (4x + 5)(7x + 1)$$

$$28x^2 + 39x + 5$$

$$17) (6n^2 - 3n + 4)(8n + 1)$$

$$48n^3 - 18n^2 + 29n + 4$$

$$18) (3m^2 + 3m + 8)(8m - 4)$$

$$24m^3 + 12m^2 + 52m - 32$$

$$19) -(4u + v)$$

$$-4u - v$$

$$20) 3(7x - 4y)$$

$$21x - 12y$$

$$21) (8a + 2b)(-7a + 3b)$$

$$-56a^2 + 10ab + 6b^2$$

$$22) (3x + 7y)(-7x - y)$$

$$-21x^2 - 52xy - 7y^2$$

$$23) (8a^2 - 5ab + b^2)(-6a + 7b)$$

$$-48a^3 + 86a^2b - 41ab^2 + 7b^3$$

$$24) (7m^2 - 2mn - n^2)^2$$

$$49m^4 - 10m^2n^2 + n^4 - 28m^3n + 4mn^3$$

$$25) (-5x^2 - 5xy - y^2)(6x^2 + 7xy - y^2)$$

$$-30x^4 - 65x^3y - 36x^2y^2 - 2xy^3 + y^4$$