ID: 1

Name_____

Polynomial Addition and Subtraction

Date_____ Period____

Simplify each expression.

1) $\left(2x^4 + 8\right) - \left(6x^4 + 4\right)$

2) $\left(5v^2 - 2v\right) + \left(3 - v^2\right)$

3) $\left(3p^4 - 8 + 6p^3\right) - \left(8p^4 + 8 - 4p^3\right)$

4) $\left(7x^2 - 6 - 7x\right) - \left(7x - 6 - 7x^2\right)$

5) $\left(3m + m^4 + 4m^2\right) + \left(5m^4 - 5m^2 - 2m\right)$

6) $\left(5a^2 - 8a - 8a^3 + 3a^4\right) + \left(4a^3 - 6a^2 - 6a\right)$

7) $\left(2k - 2 - 3k^2 - 4k^4\right) - \left(4k^2 - k^4 - 1\right)$

8) $\left(6x^4 + 2 + 8x^3 - x^2\right) + \left(x^3 + 2x^4 + 6x^2\right)$

9) $\left(5 - 6p^4\right) + \left(p^4 + 2\right) - \left(6p^2 - 4 + 4p\right)$

10) $\left(6k^3 + 3k^2\right) - \left(k^3 + 8k^4\right) + \left(3k^3 - 2k^2 - 5k\right)$

11) $\left(6m^3n^4 + 5n^4\right) + \left(5m^3n^4 - 6n^4\right)$

12) $\left(4mn - 2m^4\right) - \left(3m^4 + 6m^2n^3\right)$

13) $\left(4 - 7y^3\right) - \left(y^3 + 4\right)$

14) $\left(y^4 + 5x^2\right) + \left(6x^2 - 3y^4\right)$

15) $\left(-8y^3 - 6x^4y^2\right) - \left(5y^3 + 7x^3 - 4x^4y^2\right)$

16) $\left(-3 - a^3\right) + \left(-6a^2b + 5a^3 + 2\right)$

CHALLENGE: Simplify each expression.

17) $\left(4xy^2 - x^2y + 5x^3y^4 + x^4y\right) - \left(5xy^2 + x^2y - 5x^4y + 5x^3y^2\right) + \left(y^3 - 6xy^2 - 5x^4y - 2x^3y^4\right)$

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$-4x^4 + 4$

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$4v^2 - 2v + 3$

3) $(3p^4 - 8 + 6p^3) - (8p^4 + 8 - 4p^3)$

$-5p^4 + 10p^3 - 16$

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

$14x^2 - 14x$

5) $(3m + m^4 + 4m^2) + (5m^4 - 5m^2 - 2m)$

$6m^4 - m^2 + m$

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

$3a^4 - 4a^3 - a^2 - 14a$

7) $(2k - 2 - 3k^2 - 4k^4) - (4k^2 - k^4 - 1)$

$-3k^4 - 7k^2 + 2k - 1$

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

$8x^4 + 9x^3 + 5x^2 + 2$

9) $(5 - 6p^4) + (p^4 + 2) - (6p^2 - 4 + 4p)$

$-5p^4 - 6p^2 - 4p + 11$

10) $(6k^3 + 3k^2) - (k^3 + 8k^4) + (3k^3 - 2k^2 - 5k)$

$-8k^4 + 8k^3 + k^2 - 5k$

11) $(6m^3n^4 + 5n^4) + (5m^3n^4 - 6n^4)$

$11m^3n^4 - n^4$

12) $(4mn - 2m^4) - (3m^4 + 6m^2n^3)$

$-6m^2n^3 - 5m^4 + 4mn$

13) $(4 - 7y^3) - (y^3 + 4)$

$-8y^3$

14) $(y^4 + 5x^2) + (6x^2 - 3y^4)$

$-2y^4 + 11x^2$

15) $(-8y^3 - 6x^4y^2) - (5y^3 + 7x^3 - 4x^4y^2)$

$-2x^4y^2 - 13y^3 - 7x^3$

16) $(-3 - a^3) + (-6a^2b + 5a^3 + 2)$

$4a^3 - 6a^2b - 1$

CHALLENGE: Simplify each expression.

17) $(4xy^2 - x^2y + 5x^3y^4 + x^4y) - (5xy^2 + x^2y - 5x^4y + 5x^3y^2) + (y^3 - 6xy^2 - 5x^4y - 2x^3y^4)$

$3x^3y^4 + x^4y - 5x^3y^2 - 2x^2y - 7xy^2 + y^3$

Keystone Algebra 1

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Polynomial Addition and Subtraction

Date_____ Period_____

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7) $(2k - 2 - 3k^2 - 4k^4) - (4k^2 - k^4 - 1)$

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10) $(6k^3 + 3k^2) - (k^3 + 8k^4) + (3k^3 - 2k^2 - 5k)$

11) $(6m^3n^4 + 5n^4) + (5m^3n^4 - 6n^4)$

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CHALLENGE: Simplify each expression.

17) $(4xy^2 - x^2y + 5x^3y^4 + x^4y) - (5xy^2 + x^2y - 5x^4y + 5x^3y^2) + (y^3 - 6xy^2 - 5x^4y - 2x^3y^4)$

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   $14x^2 - 14x$

5) $(3m + m^4 + 4m^2) + (5m^4 - 5m^2 - 2m)$

   $6m^4 - m^2 + m$

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

   $3a^4 - 4a^3 - a^2 - 14a$

7) $(2k - 2 - 3k^2 - 4k^4) - (4k^2 - k^4 - 1)$

   $-3k^4 - 7k^2 + 2k - 1$

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

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$-2y^4 + 11x^2$

15) $(-8y^3 - 6x^4y^2) - (5y^3 + 7x^3 - 4x^4y^2)$

$-2x^4y^2 - 13y^3 - 7x^3$

16) $(-3 - a^3) + (-6a^2b + 5a^3 + 2)$

$4a^3 - 6a^2b - 1$

CHALLENGE: Simplify each expression.

17) $(4xy^2 - x^2y + 5x^3y^4 + x^4y) - (5xy^2 + x^2y - 5x^4y + 5x^3y^2) + (y^3 - 6xy^2 - 5x^4y - 2x^3y^4)$

$3x^3y^4 + x^4y - 5x^3y^2 - 2x^2y - 7xy^2 + y^3$