

Unit 1A Test Review

Name each polynomial by degree and number of terms. (2 words for each answer)

1) $9a^4 + 5a^3$

Quartic Binomial

2) $-3k^3 - 7k^2 + 10$

Cubic Trinomial

3) $-3n + 6$

Linear Binomial

4) -3

Constant Monomial

5) $5n^4 + 7n^5 + 3n^2 + 4n$

Quartic Polynomial

6) $-2 + 5b - 2b^2$

Quadratic Trinomial

Write the following polynomials in standard form.

7) $-6v^3 + 10v - 2v^6 + 5$

$$-2v^6 - 6v^3 + 10v + 5$$

8) $1 - 7x^6 - 4x + 6x^4$

$$-7x^6 + 6x^4 - 4x + 1$$

Simplify each expression. Write your answer in standard form.

9) $(-2b^4 - 4b) - (5b - 6b^2 - b^4)$

$$-2b^4 - 4b - 5b + 6b^2 + b^4$$

$$-b^4 + 6b^2 - 9b$$

10) $(-2x^3 + 1 - 6x^2) + (x^2 - 2x^3 - 7x^4 + 6)$

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

11) $(-5a^2 - 4a^4) - (2a^4 + a^2) - (6a^2 + 2a)$

$$-5a^2 - 4a^4 - 2a^4 - a^2 - 6a^2 - 2a$$

$$-6a^4 - 12a^2 - 2a$$

12) $4x^3(2x - 5)$

$$8x^4 - 20x^3$$

$$13) 3v(v^2 - 2v - 4)$$

$$3v^3 - 6v^2 - 12v$$

$$14) (4r - 4)(5r + 2)$$

$$20r^2 + 8r - 20r - 8$$

$$20r^2 - 12r - 8$$

$$15) (3x - 4)(4x - 2)$$

$$12x^2 - 6x - 16x + 8$$

$$12x^2 - 22x + 8$$

$$16) (b + 5)(4b^2 - 5b + 2)$$

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

$$20b^2 - 25b + 10$$

$$4b^3 + 15b^2 - 23b + 10$$

Simplify the powers of i .

$$17) i^{244} = 1$$

$$18) i^{51} = -i$$

$$19) i^{86} = -1$$

$$20) i^{801} = i$$

Simplify the complex expressions.

$$21) (-6 - 5i) + (-2 - 8i)$$

$$-8 - 13i$$

$$22) (7 - 4i) - (-4 - i)$$

$$7 - 4i + 4 + i$$

$$11 - 3i$$

$$23) (-2i) - (4 + 5i) + (8i)$$

$$-2i - 4 - 5i + 8i$$

$$-4 + i$$

$$24) (7 + 3i)^2 (7 + 3i)(7 + 3i)$$

$$49 + 21i + 21i + 9i^2$$

$$40 + 42i$$

$$25) (-6 - i)(8 + 4i)$$

$$-48 - 24i - 8i - 4i^2$$

$$-44 - 32i$$

$$26) (-5 - 6i)(-6 - 8i)$$

$$30 + 40i + 36i + 48i^2$$

$$-18 + 76i$$

$$27) \frac{(9 - 4i)}{-7i} \cdot \frac{i}{i} = \frac{9i - 4i^2}{-7i^2} = \frac{4 + 9i}{7}$$

$$28) \frac{9}{6 + 7i} \cdot \frac{(6 - 7i)}{6 - 7i} = \frac{54 - 63i}{36 - 42i + 42i - 49i^2}$$

$$= \frac{54 - 63i}{85}$$