

Unit 6 Test Review WS

Write each polynomial in standard form. Then, identify the leading coefficient and name each polynomial by degree and number of terms.

1) $-2x^2 + 7x$

2) $-2a + 7 + 6a^2$

3) $9n^3 - 8n^5 + 10$

4) $3n^2 + 9 - 8n + 2n^3$

Simplify each expression.

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

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

7) $(5a + 3a^4 - 8a^3) - (7a^4 - 8a + 8a^3)$

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

Find each product.

9) $4x^3(7x + 7)$

10) $2x(x + 2)$

11) $(2n - 2)(7n + 1)$

12) $(7v - 4)(8v - 5)$

13) $(8v + 1)(v^2 - 3v - 6)$

14) $(8b + 4)(b^2 - 6b - 6)$

15) $(x - 7)(x + 7)$

16) $(3 - 7x)(3 + 7x)$

17) $(x - 3)^2$

18) $(5x + 3)^2$

Factor the common factor out of each expression.

19) $-63x^2 + 54x - 9$

20) $-8x^8 - 12x^2 + 36x$

Factor each completely.

21) $21a^3 - 24a^2 + 14a - 16$

22) $56x^3 - 49x^2 + 40x - 35$

$$23) 3k^2 - 6k - 9$$

$$24) x^2 - x$$

$$25) 8n^2 - 12n$$

$$26) 18n^2 + 12n$$

$$27) 8n^2 - 66n + 70$$

$$28) 4n^2 - 25n + 36$$

$$29) 9x^2 - 1$$

$$30) 16n^2 - 25$$

Solve each equation by factoring.

$$31) (2n + 1)(n - 8) = 0$$

$$32) (5v + 7)(v - 8) = 0$$

$$33) n^2 + 6n = 0$$

$$34) x^2 + 9x + 14 = 0$$

35) $5p^2 - 23p + 12 = 0$

36) $5a^2 - 11a + 6 = 0$

37) The length of a rectangle is $3x^2 - 2x + 4$ and the width is $4x^2 - 5$.

a) Find the area of the rectangle.

b) Find the perimeter of the rectangle.

38) The area of a rectangle is $2x^2 - 5x + 3$. Find the length and the width of the rectangle.

39) The perimeter of a triangle is 29. If the side lengths are $3x - 1$, $2x$, and $4x + 3$, find x .