Algebra 1 Name Key



# WS Chapter 7A Test Review

Write each polynomial in standard from. Then, identify the leading coefficient and degree of the polyonomial.

1) $-10x - 10x^3 - 10$

$-10x^3 - 10x - 10$

L.C. $= -10$

Degree $= 3$

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

$6a^2 - 2a + 7$

LC $= 6$

Degree $= 2$

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

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

LC $= -8$

Degree $= 5$

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

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

LC $= 2$

Degree $= 3$

Simplify each expression.

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

$3x^4 - 5x + 6x^3$

$+$

$11x^4 - 10x + 8x^3$

$11x^4 + 8x^3 - 10x$

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

$7 + 4v + 8v^4$

$+$

$15 + 8v + 6v^4$

$6v^4 + 8v + 15$

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

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

$3a^4 \quad -8a^3 \quad 5a$

$+ \quad -7a^4 \quad -8a^3 \quad 8a$

$-4a^4 - 16a^3 + 13a$

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

$6x^3 + 4x - 1 - x + 2 + 3x^3$

$6x^3 \quad 4x \quad -1$

$+ \quad 3x^3 \quad -x \quad 2$

$9x^3 + 3x + 1$

Find each product.

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

$28x^4 + 28x^3$

10) $2x(x + 2)$

$2x^2 + 4x$

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

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

$14n^2 + 2n - 14n - 2$

$14n^2 - 12n - 2$

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

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

$56v^2 - 35v - 32v + 20$

$56v^2 - 67v + 20$

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

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

$8v^3 - 24v^2 - 48v + v^2 - 3v - 6$

$8v^3 - 23v^2 - 51v - 6$

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

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

$8b^3 - 48b^2 - 48b + 4b^2 - 24b - 24$

$8b^3 - 44b^2 - 72b - 24$

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

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

$x^2 + 7x - 7x - 49$

$x^2 - 49$

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

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

$9 + 21x - 21x - 49x^2$

$-49x^2 + 9$

17) $(x - 3)^2$

$(x-3)(x-3)$

$x(x-3) - 3(x-3)$

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

$x^2 - 6x + 9$

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

$(5x+3)(5x+3)$

$5x(5x+3) + 3(5x+3)$

$25x^2 + 15x + 15x + 9$

$25x^2 + 30x + 9$

Solve each equation by factoring.

19) $(2n + 1)(n - 8) = 0$

$2n+1=0$ $\quad n-8=0$

$-1\ -1$ $\quad +8\ +8$

$\frac{2n}{2} = \frac{-1}{2}$ $\quad n=8$

$n = -\frac{1}{2}, 8$

20) $(5v + 7)(v - 8) = 0$

$5v+7=0$ $\quad v-8=0$

$-7\ -7$ $\quad +8\ +8$

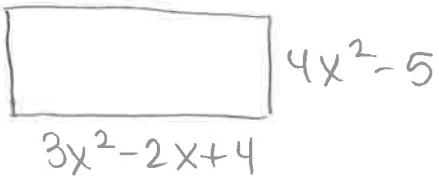
$\frac{5v}{5} = \frac{-7}{5}$ $\quad v=8$

$v = \frac{-7}{5}, 8$

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

a) Find the area of rectangle. $A = lw$

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




$4x^2(3x^2-2x+4) \quad -5(3x^2-2x+4)$

$12x^4 - 8x^3 + 16x^2 - 15x^2 + 10x - 20$

$12x^4 - 8x^3 + x^2 + 10x - 20$ units$^2$

b) Find the perimeter of the rectangle.

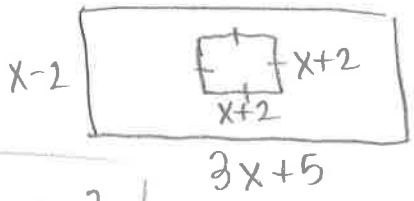
$2(4x^2-5) + 2(3x^2-2x+4)$

$8x^2 - 10 + 6x^2 - 4x + 8$

$14x^2 - 4x - 2$ units

22) You are putting in a concrete patio and inground pool in your back yard. Your patio is rectangular has side lengths of $x - 2$ and $3x + 5$ units. The pool is a square and will sit in the center of the patio. The pool has side lengths $x + 2$ units.

a) Write an expression, in terms of $x$, for the area of the patio.




$(X-2)(3X+5)$

$X(3X+5) - 2(3X+5)$

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

$3x^2 - x - 10$ units$^2$

b) Write an expression, in terms of $x$, for the area of the pool.

$(X+2)(X+2)$

$X(X+2) + 2(X+2)$

$X^2 + 2X + 2X + 4$

$x^2 + 4x + 4$ units$^2$

c) Write an expression, in terms of $x$, to represent the area of ONLY the concrete patio.

Patio − Pool

$(3X^2 - X - 10) - (X^2 + 4X + 4)$

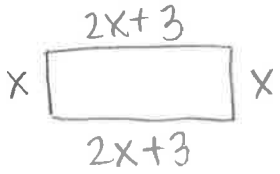
$3X^2 - X - 10 - X^2 - 4X - 4$

$3X^2 - X - 10$
$-X^2 - 4X - 4$
$2X^2 - 5X - 14$

$2x^2 - 5x - 14$ units$^2$

23) The length of a rectangle is 3 more than twice the width.

a) Write an expression, in terms of $x$ to represent the perimeter of the rectangle.




$2(X) + 2(2X+3)$

$2X + 4X + 6$

$6X + 6$ units

b) The perimeter is 36 units, using the expression from part a find $x$.

$6X + 6 = 36$
$-6 \quad -6$

$\frac{6X}{6} = \frac{30}{6}$

$X = 5$