

Name: Key Hr: \_\_\_\_\_

## Chapter 2 Review

### Standard 2A: operations with polynomials and Standard 2B: factoring completely

Given the polynomial  $4x - 3x^2 + 3x + 2 + 9x^2$  identify the stated information from the provided list below.

a. $10x^2 + 3x + 2$	b. $(6x+1)(x+1)$	c. quadratic
d. 4	e. trinomial	f. $(3x+1)(2x+2)$
g. $6x^2 + 7x + 2$	h. 6	i. monomial
j. cubic	k. $(2x+1)(3x+2)$	l. 9
m. $(6x+2)(x+1)$	n. 2	o. linear
p. binomial	q. -3	

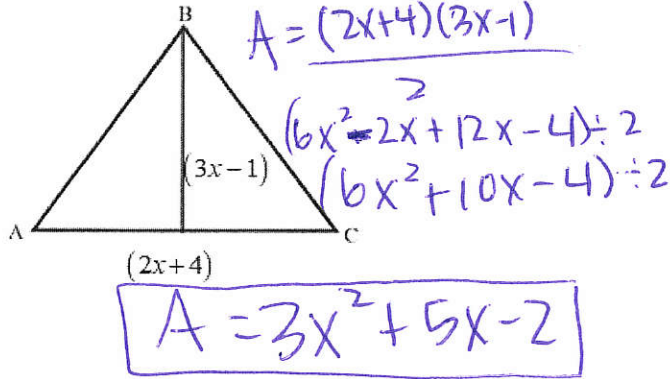
1. Standard Form g  
 $6x^2 + 7x + 2$
2. Leading Coefficient h  
 6
3. Name based on degree c  
 quadratic - degree 2
4. Name based on # of terms e  
 trinomial
5. Constant n  
 2
6. Factored Form f  
 $\frac{6x^2 + 3x + 4x + 2}{3x(2x+1) + 2(2x+1)}$   
 $(3x+2)(2x+1)$

Perform the operation and simplify. Write your answer in standard form.

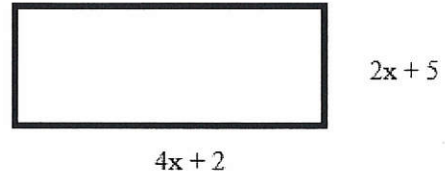
7.  $(5m^3 + 4m - 6) - (4m^2 - 2m + 1)$   
 $-4m^2 + 2m - 1$   
 $5m^3 - 4m^2 + 6m - 7$
8.  $(3x+5)^2$   
 $(3x+5)(3x+5)$   
 $9x^2 + 30x + 25$
9.  $(4x+5)(3x+1)$   
 $12x^2 + 4x + 15x + 5$   
 $12x^2 + 19x + 5$
10.  $(3x+4)(7x^2 - 2x - 3)$   
 $21x^3 - 6x^2 - 9x + 28x^2 - 6x - 12$   
 $21x^3 + 22x^2 - 17x - 12$
11.  $(2a^2 - 4a - 3) + (a^2 + 8a - 5)$   
 $+ a^2 + 8a - 5$   
 $3a^2 + 4a - 8$

Use the information to write an expression that represents the AREA of the shapes below. Write your answer in standard form:

12.



13.



Factor each expression completely.

14.  $n^2 - 7n + 10$

$$(n-2)(n-5)$$

15.  $4w^2 - 9$

$$(2w+3)(2w-3)$$

16.  $5x^3 + 20x^2 + 4x + 16$

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

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

17.  $3y^2 + 3y - 6$

$$3(y^2 + y - 2)$$

$$3(y-1)(y+2)$$

18.  $12a^4 + 16a^3 - 8a$

$$4a(3a^3 + 4a^2 - 2)$$

19.  $2m^3 - 72m$

$$2m(m^2 - 36)$$

$$2m(m-6)(m+6)$$

20.  $3b^3 - 6b^2 + 4b - 8$

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

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

21.  $3n^2 + 10n - 8$

$$3n^2 + 12n - 2n - 8$$

$$3n(n+4) - 2(n+4)$$

$$(n+4)(3n-2)$$

22.  $4y^3 + 6y^2 - 100y - 150$

$$2(2y^3 + 3y^2 - 50y - 75)$$

$$y^2(2y+3) - 25(2y+3)$$

$$2(2y+3)(y^2-25)$$

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

23.  $24x^3 + 6x$

$$6x(4x^2+1)$$

24.  $x^2 + 12x - 45$

$$(x+15)(x-3)$$

25.  $d^2 - 16$

$$(d+4)(d-4)$$

Solve for x.

26.  $3x(x - 5) = 0$

$3x = 0$   $x - 5 = 0$

$x = 0, 5$

27.  $(2x - 1)(x + 7) = 0$

$2x - 1 = 0$   $x + 7 = 0$

$x = \frac{1}{2}, -7$

28.  $x^2 + 16x + 64 = 0$

$(x + 8)(x + 8) = 0$

$x = -8$

29.  $w^2 - 100 = 0$

$(w + 10)(w - 10) = 0$

$w = 10, -10$

30.  $10m^2 + 9m + 2 = 0$

$\frac{20}{45}$

$10m^2 + 4m + 5m + 2$

$2m(5m + 2) + 1(5m + 2)$

$(5m + 2)(2m + 1) = 0$

$m = -\frac{2}{5}, -\frac{1}{2}$

31.  $2y^3 - y^2 - 2y + 1 = 0$

$y^2(2y - 1) - 1(2y - 1) = 0$

$(2y - 1)(y^2 - 1) = 0$

$(2y - 1)(y + 1)(y - 1) = 0$

$y = 1, -1, \frac{1}{2}$

Give one value of b that would make the following polynomial factorable.

30.  $x^2 + bx - 16$

$-16$   
 $\wedge$   
 $-1 \quad 16$   
 $1 \quad -16$  4 - 4  
 $-2 \quad 8$   
 $2 \quad -8$

$b = 15, -15, 6, -6, 0$

31. Joe writes the equation  $x^2 + 4x - 12$  on the board. Parks says that it can be factored as  $(x + 4)(x - 3)$ .

Joe says that it cannot be factored at all. Which student do you agree with, if any, and why?

$(x + 6)(x - 2)$  Neither, it can be factored as  $(x + 6)(x - 2)$

32. The following expression represents the area of the photo below:  $x^2 + 7x + 12$ . What expression could represent the base?



$(x + 3)$

$(x + 3)(x + 4)$

$(x + 4)$

$(x + 4)$

33. Find the following for the given expression  $7x - x^3 + 2x - 3x^3 - 5x$

- A) Standard form  $-4x^3 + 4x$
- B) Degree 3
- C) Name based on number of terms Binomial
- D) Leading coefficient -4
- E) Constant none