

## Lessons 5.3 & 5.4 Review Worksheet

Name: \_\_\_\_\_

Find the sum or difference.

1.)  $(2y^2 - 5y + 1) + (y^2 - y - 4)$

2.)  $(12x^3 - 4x^2 + 7x - 3) - (-2x^3 + 5x - 5)$

Find the product.

3.)  $2x^3(5x - 1)$

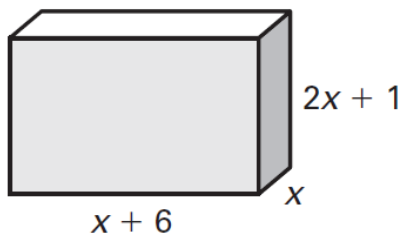
4.)  $(y - 1)(y^2 + 6y - 2)$

5.)  $(4t + 1)^2$

6.)  $(2f + 1)^3$

Write the volume of the figure as a polynomial in standard form.

7.)  $V = lwh$



Factor the polynomial completely (*Monomial Factors*).

8.)  $128x^3 - 50x$

9.)  $x^3 - 7x^2 + 10x$

10.)  $9x^4 - 75x^3 - 150x^2$

**Factor the polynomial completely (*Sum/Difference of Cubes*).**

11.)  $27g^3 + 343$

12.)  $40v^3 - 625$

**Factor the polynomial completely (*By Grouping*).**

13.)  $x^3 + 6x^2 + 7x + 42$

14.)  $9m^3 + 18m^2 - 4m - 8$

**Factor the polynomial completely (*Quadratic Form*).**

15.)  $c^4 - 81$

16.)  $6y^6 - 5y^3 - 4$

**Factor the polynomial completely (*Any Method*).**

17.)  $x^6 + 7x^3 + 6$

18.)  $2x^7 - 32x^3$

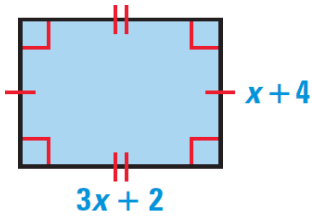
Find the real-number solutions of the equation (Start by factoring).

19.)  $x^3 + 2x^2 - 25x - 50 = 0$

20.)  $4w^4 + 40w^2 - 44 = 0$

Find the possible value(s) of  $x$ .

21.) Area = 48 units<sup>2</sup>



22.) At the ruins of Caesarea, archaeologists discovered a huge hydraulic concrete block with a volume of 945 cubic meters. The block's dimensions are  $x$  meters high by  $12x - 15$  meters long by  $12x - 21$  meters wide. What are the dimensions of the block?

23.) Suppose you have 250 cubic inches of clay with which to make a sculpture shaped like a rectangular prism. You want the height and width each to be 5 inches less than the length. What should the dimensions of the prism be?