

## Algebra and Geometry 1. Homework 14.



1. Simplify the following expressions (combine like terms):

- |                       |                       |
|-----------------------|-----------------------|
| a. $7a + (2a + 3b)$ ; | b. $9x + (2y - 5x)$ ; |
| c. $(5x + 7a) + 4x$ ; | d. $(5x - 7a) + 5a$ ; |
| e. $(3x - 6y) - 4y$ ; | f. $(2a + 5b) - 7b$ ; |
| g. $3m - (5n + 2m)$ ; | h. $6p - (5p - 3a)$ ; |

2.

- a.  $(x^2 + 4x) + (x^2 - x + 1) - (x^2 - x)$ ;  
b.  $(a^5 + 5a^2 + 3a - a) - (a^3 - 3a^2 + a)$ ;  
c.  $(x^2 - 3x + 2) - (-2x - 3)$ ;  
d.  $(abc + 1) + (-1 - abc)$ ;

3. Multiply polynomials (do from  $f$  to  $j$ ).

- |                         |                           |
|-------------------------|---------------------------|
| a. $(a + 2)(a + 2)$ ;   | f. $(a + 1)(a + 3)$ ;     |
| b. $(3 + y)(y + 4)$ ;   | g. $(c + d)(c - 2d)$ ;    |
| c. $(3 + x)(3 - x)$ ;   | h. $(y - 2)(3 - y)$ ;     |
| d. $(x - y)(x + y)$ ;   | i. $(x - m)(x - m)$ ;     |
| e. $(2a + c)(a + ac)$ ; | j. $(2d + 3l)(2d + 3l)$ ; |

4. In Peter's bottle there is 10% more soda than in John's bottle. Peter drank 11% of his soda, while John drank 2% of his soda. Who then has more soda left?
5. Fresh watermelon weighed 10 kg and contained 99% of water. In the store the watermelon lost some amount of water and now contains only 98% of water. What is its weight now?
6. The goat can go around the rectangle 7 m x 10 m, attached by the 3 m long rope. Draw the picture of the shape the goat will graze, using the scale 0.5 cm for 1 m. Use ruler and compass!

