Extra Practice on Polynomial operations

1 Simplify the following expressions:

a) $7x^2y - 3y + x^2 - 5y$

d) $(4a^2b - 3a + 5) - (4a^2b + 3ab + 6a^2b)$

b) $(-5x^2 + 6x - 1) + (2x^2 - 3x - 4)$

e) $(6a^2b + 2a - 4b) - (5b + 3ab - 4a) + (2a^2b + ab)$

c) $(3a + 2a - 3a^2) - (3a^2 - 5a - a) + 8a$

f) $8x^2 - 12x - (8x^2 - 9x) - 4x$

2 Expand and simplify :

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

d) $(n - 5)(n + 2)$

b) $y(-3y^2 + 4y - 12)$

e) $(x + 8)^2$

c) $4a(5a^2 - 5ab)$

f) $(2m - 5)(-7m - 3)$

3 Find a binomial to complete the following equation:
$$(-2a) (\qquad) = -6a^5 + 4a^3$$

4 Divide the monomial $-30\ p^3q^2s^4$ by each of the following:

a) $-3\ p^2q^2s^3$

c) $6\ p^5qs^2$

=

=

b) $-30\ pqs$

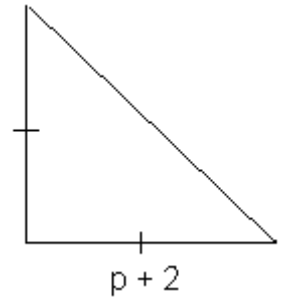d) $15\ p^3q^2s^4$

=

=

5 Look at the following triangle. Show your work.

a) If the perimeter equals 4p + 11, find the length of the missing side.
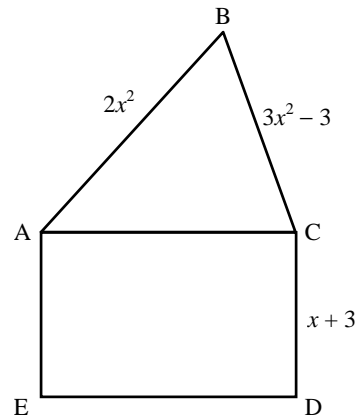

$p + 2$

b) What would be the area of the square formed if you put two of these triangles together?

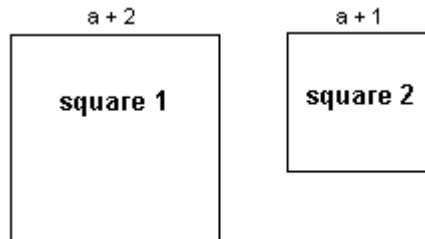**6** The perimeter of triangle ABC is given by the algebraic expression:

$$5x^2 + 3x - 6$$

What is the simplified algebraic expression for the area of rectangle ACDE? Show your work.

7 Look at the following squares

a) Write the simplified algebraic expression for the perimeters of each square.

b) Write the simplified algebraic expression for the difference between the perimeters of these squares.

c) Write the simplified algebraic expressions for the area of each square.

d) Write the simplified algebraic expression for the difference between the areas of these squares.