Name: _____ Date: _____

Chapter 5 Prerequisite Skills

Show all your work.

1. For each expression, identify
   - the number of terms
   - whether it is a monomial, binomial, trinomial, or polynomial

   a) $3p^2$

   b) $(3x)(5y)$

   c) $h + 2h^2 - 3$

   d) $2x^2 - 4x + 6$

2. What expression is represented by each set of algebra tiles? Shaded tiles are positive and white tiles are negative.

   a)

   b)

   c)

**3.** Determine each product. Use a model if necessary.

   a) $(-2x)(4.5x)$

   b) $\left(\dfrac{3t}{7}\right)(14t)$

   c) $(0.5s)\left(\dfrac{s}{4}\right)$

4. Determine each quotient. Use a model if necessary.

   a) $\dfrac{15p^2}{3p}$

   b) $\dfrac{-8.4n^2}{2.1n}$

   c) $\dfrac{16.8xy}{(-4x)}$

5. A rectangle is five times as long as it is wide. If the area of the rectangle is 12 500 cm², what are its dimensions? Use a diagram to help you.

6. A square has side lengths of $2s$. A circle has a diameter that is the same length as the sides of the square. What is the ratio of the areas of the two shapes?
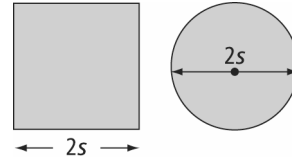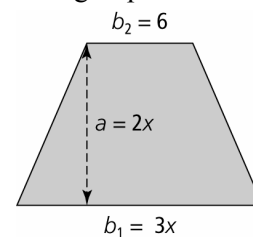

7. Expand.

   a) $(2x)(3x - 1)$ **b)** $(-4k + 1)(-5k)$

   c) $(6x)\left(\dfrac{2}{3}x - 2\right)$ **d)** $(3.6p - 1.2)\left(\dfrac{p}{3}\right)$

8. Divide.

   a) $\dfrac{(10b^2 - 8b)}{2b}$

   b) $\dfrac{3.9m^2 - 1.3m}{-1.3}$

   c) $\dfrac{-4h^2 + h}{h}$

9. The area of a trapezoid is given by the formula $A = \dfrac{1}{2}a(b_1 + b_2)$, where a is the altitude and b_1 and b_2 are the bases of the trapezoid. What is an expression for the area of the following trapezoid?

10. A rectangle has an area of $15v^2 - 12v$ square units. The width of the rectangle is $3v$ units. What is the length of the rectangle?