Grade 9 Math PAT Prep

1. Area, Scale, Grids

   The pattern below is placed on a 1 cm grid. Determine the total area, in square units, of the black squares if the pattern continues to figure 6.

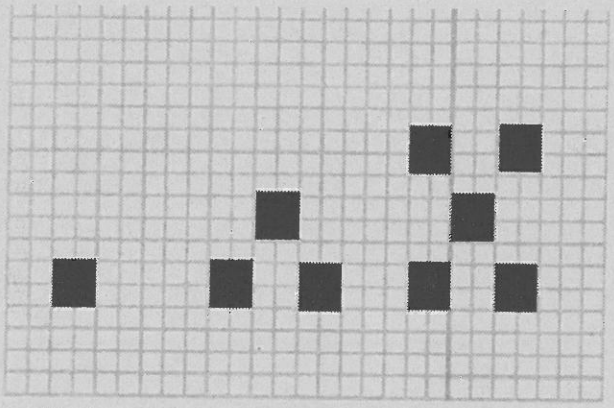
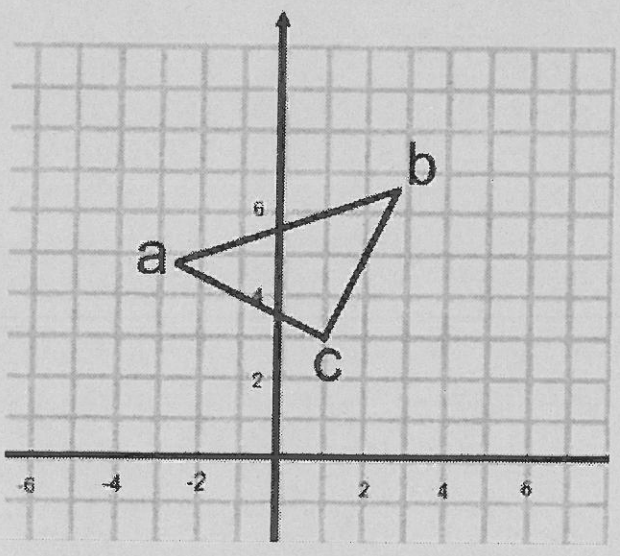


Fig. 1 Fig. 2 Fig. 3

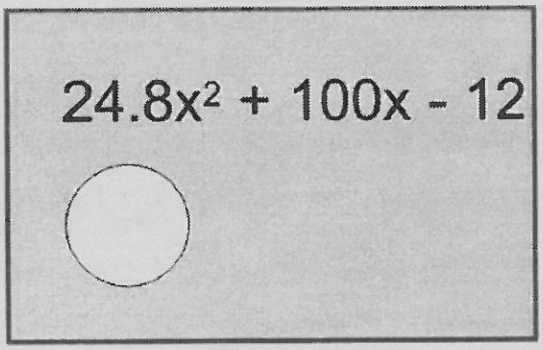
2. Perimeter, transformations, and grid

If shape A is rotated 3 times about point 'c' clockwise 90 degrees. Calculate the perimeter, to the nearest unit, of the new



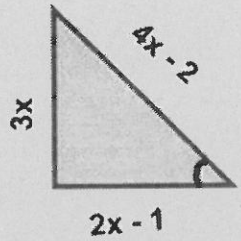
3. Area, Polynomials, composite shapes and exponent laws.

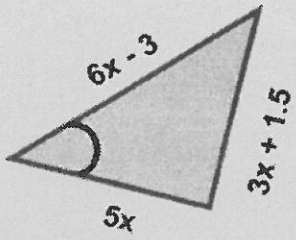
A contractor has designed a patio for a client that includes a fire pit with a diameter expressed by $4x - 8$. Determine the amount of material required to construct the patio excluding the fire pits area. ($\pi \doteq 3.14$)



4. Polynomials, Shapes, Equations, and Scales

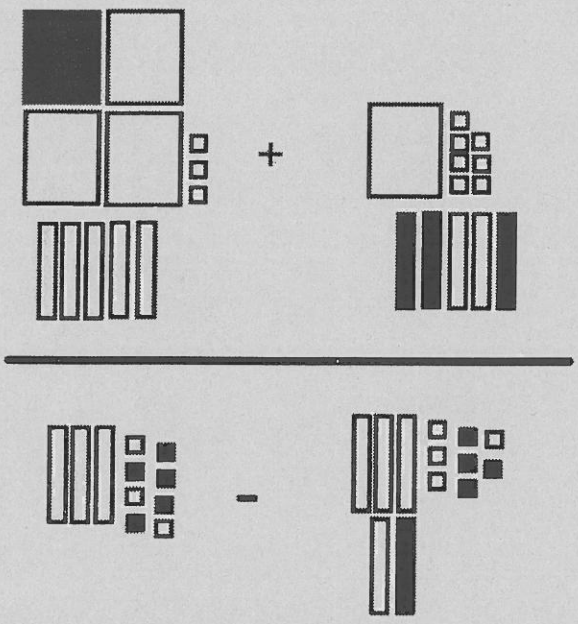
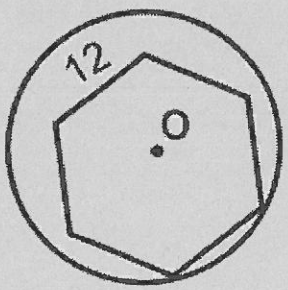
The images below have been enlarged. Continue the pattern and determine the perimeter of figure 4.





5. Exponent laws, rational numbers & using models to solve an equation

The model below represents a polynomial expression. The white tiles are (-) negative and the black tiles are (+) positive.



6. A circle with a diameter of 32 cm is used to construct a sign. The area of the hexagon will be covered with a reflective material. Calculate the area of the hexagon to the nearest 10^{th} of a centimeter. ($\pi = 3.14$)