1. Sydney Harbour Bridge in Australia is usually wide for a long-span bridge. It carries two rail lines, eight road lanes, a cycle lane, and a walkway.
   1. Factor the expression 10*x*2 7*x* 3 to find the length and the width of the bridge.

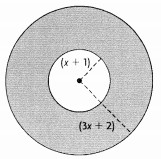


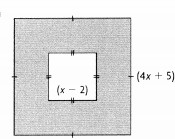
* 1. If x represents 50 m, what are the length and the width of the bridge, in metres?

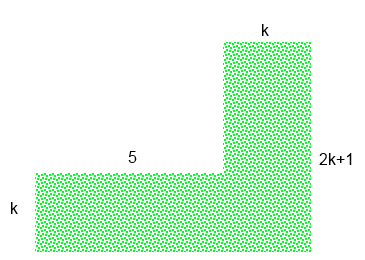
1. The height of a ball thrown from the top of a building can be approximated by the formula

*h* 5*t* 2 15*t* 20, where *t* is the time, in seconds, and *h* is the height, in metres.

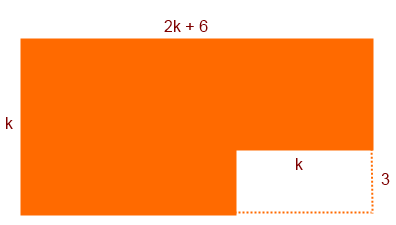
Write the formula in factored form. How long does it take for the ball to reach the ground?

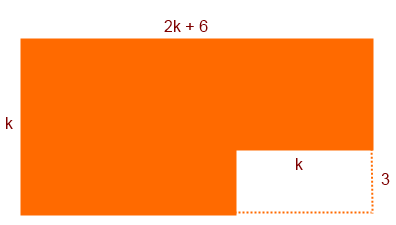
1. Determine a simplified **factored** expression for the area of shaded region.

b.

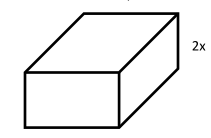
**c.**

**d.**





4. The volume of a rectangular prism is represented by the polynomial 2x3 - 24x2 + 72x.

a. Factor the polynomial completely to determine the dimensions of the prism.   
Remember that *V = lwh*

b. If x represents 8 cm, what are the possible dimensions of the prism?

c. Could x represent 5 cm? Explain.

5. Write a polynomial with three terms that when factored has a GCF of 3x4y2z.

6. Determine a possible value of k such that x2 +kx - 10 can be factored as a simple trinomial.