$\mathcal{N}$OTES   APPLICATION

**VERBALLY – Write an equations or equations to represent the following. Then solve use factoring.**

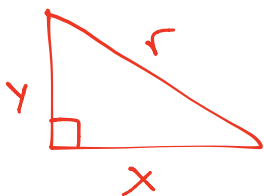3. The product of two numbers is $255$. Their difference is $2$. Find these numbers. $(x,y)$

① $\boxed{\begin{array}{l} X \cdot y = 255 \\ X - y = 2 \end{array}}$ ②$x = y + 2$

③ $(y+2)y = 255$
$y^2 + 2y - 255 = 0$
$(y-15)(y+17) = 0$
$y - 15 = 0 \mid y + 17 = 0$
$y = 15 \quad y = -17$

④ $\boxed{\begin{array}{l|l} x = (15) + 2 & x = (-17) + 2 \\ x = 17 & x = -15 \end{array}}$

The numbers are $15$ and $17$.

or

The numbers are $-15$ and $-17$

what is pythagorean Theorem?



$x^2 + y^2 = r^2$

Using algebra, express 3
consecutive odd numbers in terms
of $x$.

$1^{st} = x$
$2^{nd} = x + 2$
$3^{rd} = x + 4$

**ALGEBRAICALLY**

6. George hurls      upward from the top of a 25 ft tall pizza   . The height of the vomit, in
ft, $t$ seconds after he hurled it is $h(t)$

   a. What does the $h(3) = 32$

   *Three seconds after vomiting,*
   *the vomit is 32 feet high.*

   b. At what height is the vomit when it hits the ground?

   *Zero feet*     $h(t) = 0$



7. Write the equation of a quadratic function whose solutions are 5 and -3.

$$f(x) = [x - (5)][x - (-3)]$$
$$= (x-5)(x+3)$$
$$f(x) = x^2 - 2x - 15$$

8. Determine the value of $k$ so that the roots of the equation $x^2 - kx + 169 = 0$ are equal.

$$(x - 13)^2 = 0$$
$$x^2 - 26x + 169 = 0$$

$$k = -26$$

**GRAPHICALLY**

a.     For a 3rd degree polynomial make a rough sketch of the graph WITHOUT your calculator
given $f(3) = 5$, $f(-1) = 0$, $f(4) = 0$, $f(7) = 0$