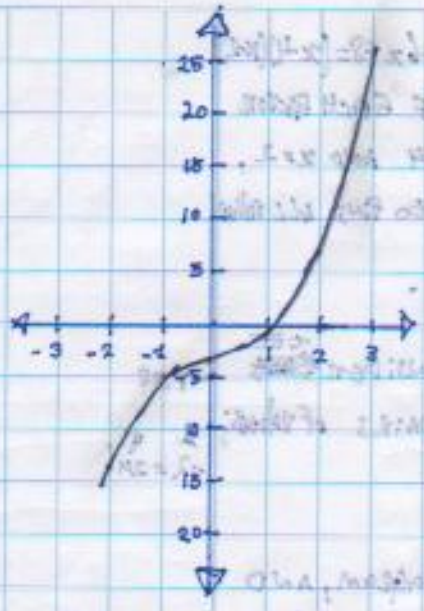

NOTE THAT THE CURVE CROSSES THE x AXIS AT ONLY ONE POINT THIS INDICATES THAT THE OTHER TWO ROOTS MUST BE IMAGINARY. LET US APPROXIMATE THE IRRATIONAL ROOT SHOWN IN FIGURE 6. WHEN $x=1$, $y=-1$, AND WHEN $x=2$, $y=7$. THE REAL ROOT MUST LIE BETWEEN $x=1$ AND $x=2$. FURTHERMORE IT LIES NEARER $x=1$ THAN IT DOES TO $x=2$ SINCE THE y VALUE CORRESPONDING TO THE FORMER IS CLOSER TO 0. IF WE LET $x=1.2$, $y=-0.072$, AND IF $x=1.3$, $y=1.287$. THUS THE REAL ROOT IS SLIGHTLY GREATER THAN 1.2. IF GREATER ACCURACY IS DESIRED, WE LET x TAKE ON VALUES SUCH AS $x=1.21$ AND SO ON AND COMPARE TO CORRESPONDING VALUES OF y.

Problems - Algebra

1) WRITE A FORMULA FOR THE FOLLOWING FUNCTIONAL RELATIONSHIPS

a) NUMBER OF DOLLARS D EARNED IN x HOURS AT 7 DOLLARS PER HOUR. ~~$N = D(x)(7)$~~ $D = xy$ $D = (7)(37) = \$296$

b) THE VALUE V IN CENTS OF 5 QUARTERS AND x DIMES.
$V = 5(25)(x(3))$ $x=1$, $V = 625$

c) THE PERIMETER p OF A SQUARE WHOSE SIDE IS S.
$p = 4S$ $S=1$, $p=4$

2) USING $D = rt$, HOW LONG DOES IT TAKE TO GO 180 MILES AT 30 MILES PER HOUR? AT x MILES PER HOUR?

$D = rt$ $180 = 30t$ $t(h) = \frac{180(mi)}{30(mi/h)}$ $t(h) = 6\,h$

$180(mi) = 30(mi/h)x(h)$ $t(h) = \frac{2}{x}$

3) SOLVE THE FOLLOWING EQUATIONS:

a) $x^2 + 2x - 15 = 0$

$(x \cdot x) + 2(x) - 15$

$(x+1)(2+x-15)$ PRODUCTO ESPECIAL

$(x+3)(x-5)$

$x^2 - 5x + 3x - 15$

$x^2 - 2x - 15 = +4x$

$2x - 2x + x^2 + 2x - 15 = 0$

$x^2 + 2x = x(x+2) - 15 = 0$

$x(x+2) = +15$

$x + 2 = \frac{15}{x}$

$x = \frac{15}{x} - 2$

$x^2 = 15 - 2x$

$x = \sqrt{15 - 2x}$

$x = \sqrt{15 - \sqrt{2x^2}}$

$x = \sqrt{15} - \sqrt{2}\sqrt{x}$

$x - \sqrt{48} \sqrt{2}$

$x - \sqrt{2} = \sqrt{13}$

$x =$

$x^2 + 2x = 15$

$x(x+2) = 3(5)$

$x(x+2) - 3(5) = 0$

$(x+3)(x+2)$

a) 0.828 (RESUMO)

28/11/2018