

b. For  $m=0$

$$R(x) = (2(0)+1)x^2 - 3(0)x - 4 \\ = x^2 - 4$$

$$\therefore R(x) = (x-2)(x+2).$$

i)  $R(x) = -2.$

$$x^2 - 4 = -2$$

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

$$x^2 = 2.$$

Thus,  $x = \pm\sqrt{2}$

Solution set of  $R(x) = -2$

$$\text{is } x = \{+\sqrt{2}, -\sqrt{2}\}$$

ii)  $R(x) = (2x+4)$

$$(x-2)(x+2) = -(2x+4)$$

$$(x-2)(x+2) = 2(x+2)$$

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

$$(x+2)[(x-2) - 2] = 0$$

$$(x+2)(x-4) = 0$$

Thus,  $x = -2$  or  $x = 4.$

5) a.  $K(x) = \frac{R(x)}{N(x)} = \frac{(x-2)(x+2)}{2(2x-3)(x+2)}$

cond:  $2x-3 \neq 0 \quad \& \quad x+2 \neq 0$   
 $x \neq \frac{3}{2} \quad \& \quad x \neq -2$

Thus,  $K(x)$  is defined for all real values

of  $x$  except for  $x = \frac{3}{2}$  or  $x = -2.$

b)  $K(x) = \frac{3}{2}.$

$$\frac{(x-2)(x+2)}{2(2x-3)(x+2)} = \frac{3}{2}$$

$$\frac{x-2}{2(2x-3)} = \frac{3}{2}$$

$$2(x-2) = 6(2x-3)$$

$$2x-4 = 12x-18$$

$$+2x-12x = -18+4$$

$$-10x = -14$$

then,  $x = \frac{-14}{-10}$

Thus,  $x = \frac{7}{5}$  which is accepted  
Since  $x = \frac{7}{5}$  is included in domain of  $K(x).$

P-4.