

HW 5.1

March 8, 2015 2:45 PM

#7) 5.1
=

$$y = 3x^2 + 6x + K$$

minimum value of

y is 4,
 $K = ?$

$$y = 3(x^2 + 2x) + K$$

$$y = 3(x^2 + 2x + 1 - 1) + K \quad \text{C.T.S.}$$

$$y = 3(\underline{x^2 + 2x + 1}) - 3 + K$$

$$y = 3(x+1)^2 - 3 + K.$$

vertex $(-1, \underline{-3 + K})$

$$4 = -3 + K$$

$$\boxed{7 = K}$$

$$8) \quad \frac{x}{z} + 3y = 4 \rightarrow x + 6y = 8 \rightarrow$$

$$x + 6y = 9 \quad \downarrow \quad x + 6y = 9$$

$$1) \quad \cancel{2x} + 4y = 10$$

$$2) \quad \cancel{2x} - 3y = 3$$

$$7y = 7$$

$$y = 1$$

$$\boxed{y = 1}$$

$$\boxed{y=1}$$

⑫

$$\sqrt{4+x} + \sqrt{10-x} = 6$$

$$\sqrt{4+x} = 6 - \sqrt{10-x}$$

$$4+x = (6 - \sqrt{10-x})^2$$

$$4+x = (6 - \sqrt{10-x})(6 - \sqrt{10-x})$$

$$4+x = 36 - 12\sqrt{10-x} + 10-x$$

$$12\sqrt{10-x} = 42 - 2x$$

$$12\sqrt{10-x} = 2(21-x)$$

$$6\sqrt{10-x} = (21-x)$$

$$36(10-x) = (21-x)(21-x)$$

$$360 - 36x = 441 - 42x + x^2$$

$$0 = x^2 - 6x + 81$$

$$0 = x = ?? \quad x = ?? \quad b^2 - 4ac$$

$$(\sqrt{4+x} + \sqrt{10-x})^2 = 6^2$$

$$(\sqrt{4+x} + \sqrt{10-x})(\sqrt{4+x} + \sqrt{10-x}) = 36$$

$$\cancel{4+x} + 2\sqrt{(4+x)(10-x)} + \cancel{10-x} = 36$$

$$2\sqrt{(4+x)(10-x)} = 22$$

$$\sqrt{(4+x)(10-x)} = 11$$

11)

Tim + MANIC \rightarrow 4 homes .

JACK + Tim + MANIC \rightarrow 2 homes