Assignment Tue May 5

Alg I Ch 10 TEST Review

(Questions you need to do without calc are labelled Non Calc)

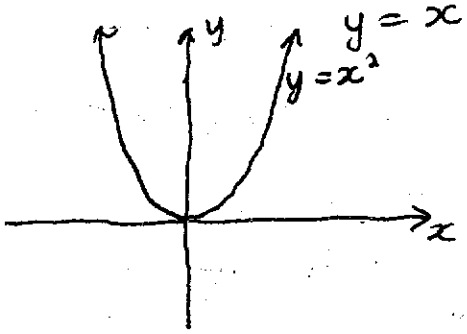
① Give an example of a quadratic function that opens downward.

(Non Calc)

$y =$ _____

② Make a rough sketch of $y = \frac{1}{2}x^2$, $y = 5x^2$, $y = -10x^2$ based on the $y = x^2$ graph below.

(Non Calc)



$y = x^2 - 4$

(Use wideness, narrowness open up, open down, shifting)

③ State whether each function has a max. or a min vertex

(Non Calc)

a) $y = 4x^2 + 1$ b) $y = -3x^2 - 7$ c) $y = \frac{1}{2}x^2 + 9$.

④ Graph (by hand) the quadratic functions below:

Use the axis formula $\boxed{x = -b/2a}$ and a table of 5 values to plot

a) $y = x^2 + 6x + 2$

$x = \frac{-b}{2a}$

$=$

$=$

Table

x	y

Graph

b) $y = -2x^2 + 4x - 3$

$x = \frac{-b}{2a}$

$=$

$=$

Table

x	y

Graph

⑤ Solve the quadratic equations by square roots (solve like a regular equation, then $\sqrt{}$, don't forget. $\pm$).

a) $2x^2 = 8$

b) $x^2 - 10 = 3$

c) $9x^2 = 4$

⑥ Solve by factoring and using the zero product property

a) $x^2 + 7x + 12 = 0$
(VON CALC)
$(\quad)(\quad) = 0$

b) $5x^2 - 10x = 0$
(GCF factoring)
(NON CALC)

c) $x^2 - 5x + 4 = 0$
$(\quad)(\quad) = 0$
(NON CALC)

d) $2x^2 + 5x = 3$
(set equal to zero first)
(VON CALC)
(Hard factoring)

⑦ Solve using the quadratic formula $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ to solve.
(Use your calculator + write decimal answers).

a) $4x^2 + 3x = 8$
(set = 0 first)

b) $-x^2 + 8x - 1 = 0$

c) $x^2 + 2x + 6 = 0$

⑧ Find the number of solutions for $4x^2 + 12x + 9 = 0$ using the discriminant