

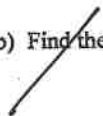
Sketch the graph for the following. Label all key values on the graph.

1. $y > x^2 - 8x + 7$

a) Find the y-int.



b) Find the zeros.



c) Find the vertex.

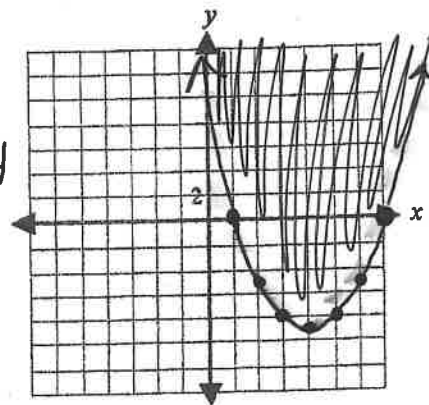
Shortcut: $x = -\frac{b}{2a} = \frac{8}{2(1)} = 4$

$4^2 - 8(4) + 7$

$16 - 32 + 7$

$-16 + 7$
 -9

$(4, -9)$



d) Is the curve solid vs. dotted?

e) Test the point (____, ____) to shade inside or outside the parabola. Show work.

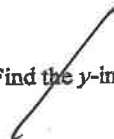
$>$ -above

2. $y \geq -2(x+3)^2 + 8$

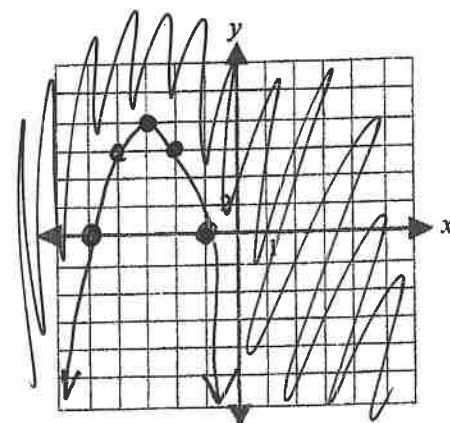
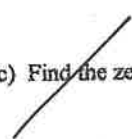
a) Find the vertex.

$(-3, 8)$

b) Find the y-int.



c) Find the zeros.



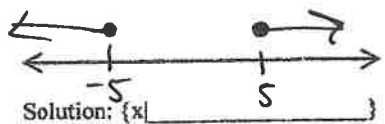
d) Is the curve solid vs. dotted?

e) Test the point (____, ____) to shade inside or outside the parabola. Show work.

\geq above

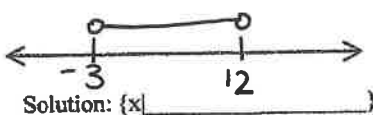
Factor, use "region testing" to solve, graph the solution on a number line, and write your final answer in set notation.

3. $x^2 - 25 \geq 0$
 $(x-5)(x+5) \geq 0$



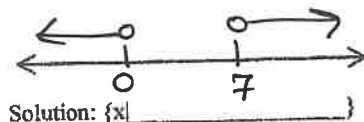
Solution: $\{x \mid x \leq -5 \text{ or } x \geq 5\}$

4. $x^2 - 9x < 36$ $x^2 - 9x - 36 < 0$
 $(x-12)(x+3) < 0$



Solution: $\{x \mid -3 < x < 12\}$

5. $x^2 > 7x$ $x^2 - 7x > 0$
 $x(x-7) > 0$



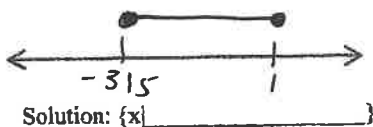
Solution: $\{x \mid x < 0 \text{ or } x > 7\}$

6. $x^2 - 2 < 7$ $x^2 - 9 < 0$
 $(x-3)(x+3) < 0$



Solution: $\{x \mid -3 < x < 3\}$

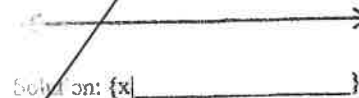
7. $5x^2 - 2x - 3 \leq 0$
 $5x^2 \leq 2x + 3$ $(5x+3)(x-1) \leq 0$



Solution: $\{x \mid -3/5 \leq x \leq 1\}$

For #8, what should you do first?

8. $-x^2 + 12x - 20 < 0$



Solution: $\{x \mid \dots\}$