Unit 5 Part 1

Lesson 7

Graphing in Standard Form

Lesson 8 → Solving Equations by Factoring

➢ **Solve each equation:**

1. $x + 5 = 8$ $x =$ _____	2. $x - 6 = -9$ $x =$ _____	3. $2x + 4 = 10$ $x =$ _____	4. $5x - 1 = 9$ $x =$ _____

❖ **Vertex Form** Quadratic Equation: $y = a(x-h)^2 + k$

❖ **Standard Form** Quadratic Equation: $y = ax^2 + bx + c$

➢ **Vertex Form Equations:** Name the **Vertex and Direction** of each Quadratic Equation.

1. $y = (x+3)^2 - 6$	2. $y = -(x-1)^2 + 4$	3. $y = x^2 - 2$	4. $y = 2(x+5)^2$
Vertex: (-3, -6)	Vertex: (1, 4)	Vertex: (0, -2)	Vertex: (-5, 0)
Direction: up	Direction: Down	Direction: up	Direction: up

➢ **Standard Form Equations:** Name the **Vertex and Direction** of each Quadratic Equation.

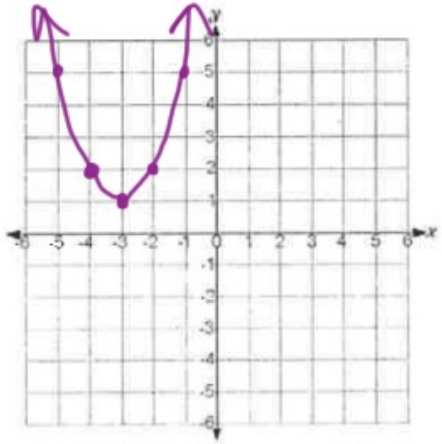
5. $y = x^2 + 6x + 10$	6. $y = -x^2 + 4x - 3$	7. $y = 2x^2 - 20x + 44$	8. $y = -2x^2 + 20x - 50$
Vertex: (-3, 1)	Vertex: (2, 1)	Vertex: (5, -6)	Vertex: (5, 0)
Direction: up	Direction: Down	Direction: up	Direction: Down

➢ Write each of the above **standard form** equations in **vertex form**.

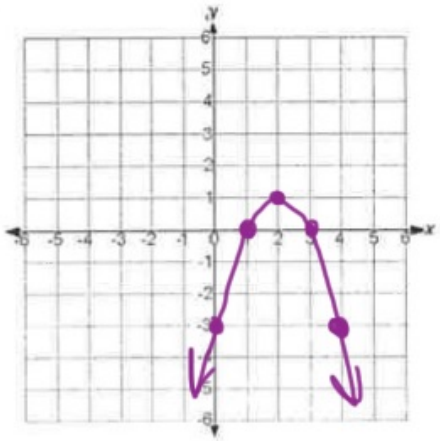
5.	6.	7.	8.
Vertex form equation: $y=(x+3)^2+1$ $(-3,1)$	Vertex form equation: $y=-(x-2)^2+1$ $(2,1)$	Vertex form equation: $y=2(x-5)^2-6$ $(5,-6)$	Vertex form equation: $y=-2(x-5)^2$ $(5,0)$

➢ **Graph** #'s 5, 6, & 7 from above.

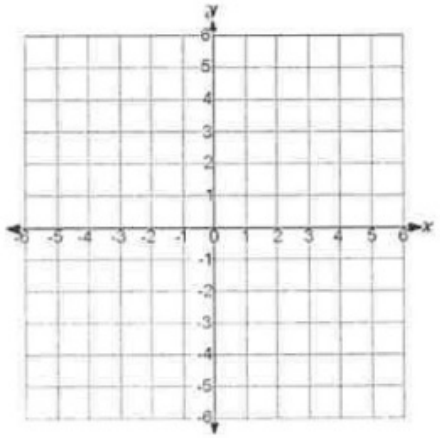
5.



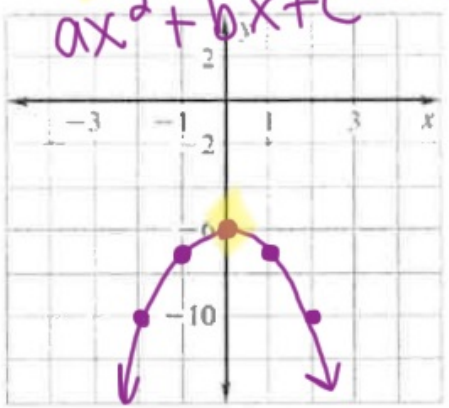
6.



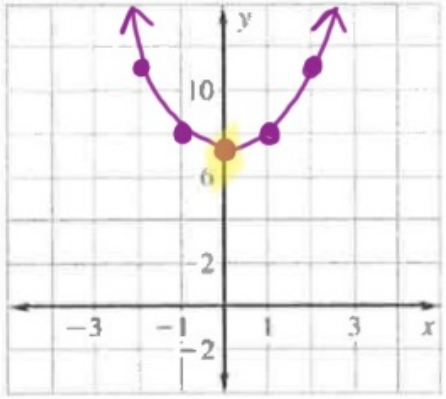
7.



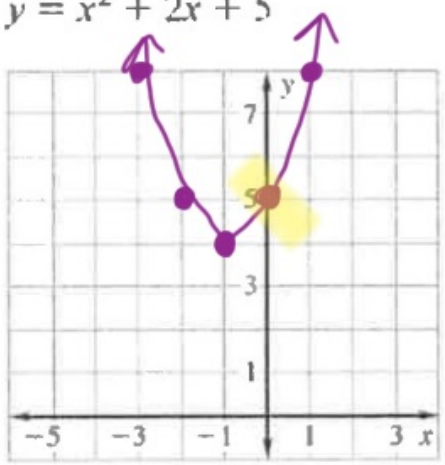
1. $y = -x^2 - 6$ V: (0,-6) $ax^2 + bx + c$



2. $y = x^2 + 7$ (0,7)



3. $y = x^2 + 2x + 5$



bx

-1, b 0, c -6	a 1, b 0, c 7	a 1, b 2, c 5
coord. of vertex:	x coord. of vertex:	x coord. of vertex:
coord. of vertex:	y coord. of vertex:	y coord. of vertex:
ertex: (0,-6)	vertex: (0,7)	vertex: (-1,4)
xis of symmetry: x=0	axis of symmetry: x=0	axis of symmetry: x=-1

y - intercept: (0,-6) direction: down vertex form: $y=-(x+0)^2-6$	y - intercept: (0,7) direction: up vertex form: $y=(x+0)^2+7$	y - intercept: (0,5) direction: up vertex form: $y=(x+1)^2+4$ V(-1,4)

Equation	Vertex	Axis of Symmetry	Direction	Vertex Form
1.				
2.				
3.				

27, 28, 29