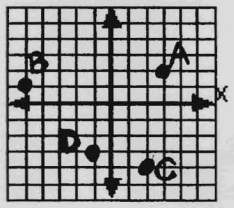
Algebra 2: Review Worksheet A SOLUTIONS
Topic 4: Quadratics Equations and Parabolas

1. $6-7i$ 2. $14+2i$ 3. $5+8i$ 4. $-1-4i$ 5. -12 6. 17 7. $11+13i$

8. $-4+32i$ 9. $2-i$ 10. $\frac{18}{13}+\frac{12}{13}i$ 11. $\frac{21}{29}-\frac{9}{29}i$ 12. $\frac{12}{17}+\frac{14}{17}i$

13. $i^2=-1$ 14. $i^3=-i$ 15. $i^4=1$ 16. $i^5=i$ 17. $i^{10}=-1$ 18. $i^{12}=1$

19. 

23. $x=-2\pm 2i$ 24. $x=-5 \quad x=5$ 25. $x=-4 \quad x=6$ 26. $x=0 \quad x=8$ 27. $x=\pm 6i$

28. $x=\frac{1\pm i\sqrt{39}}{4}$ or $x=\frac{1}{4}\pm\frac{\sqrt{39}}{4}i$ 29. $x=-5/2 \quad x=1$ 30. B) (-4, -1) 31. $(4,0)\ \&\ (-3,0)$

32. $\left(-\frac{2}{3},0\right)$ & $(5,0)$ 33. Vertex: (3,4) **Max Value = 4** 34. Vertex: (-2,3) **Min Value = 3** 35. **Minimum Point** Vertex: (-3,-13)

36. **Maximum Point** Vertex: (-4,21) 37. $y=2(x-5)^2-49$ 38. If $0<a<1$, $y=ax^2$ is **wider** than $y=x^2$

39. If $a>1$, $y=ax^2$ is **thinner** than $y=x^2$ 40. If $a<0$, $y=ax^2$ is **upside down** from $y=x^2$

41. Vertex (-5,2) to (1, -3)
Shifts right 6 units, down 5 units.

42. Vertex (2,-1) to (-6,-4)
Shifts left 8 units, down 3 units

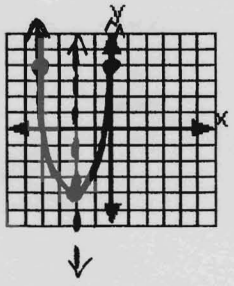
43. A & B 44. C & D 45. B & E 46. b = -1 c = 6

47. Bottom Graph
Vertex : (-5, -2)
Same shape, faces down, so a = -1
$\boxed{y=-(x+5)^2-2}$

48. Bottom Graph
Vertex: (4, -3)
Same shape, faces down, so a = -1
$\boxed{y=-(x-4)^2-3}$

49. Graph $y=2(x+2)^2-4$

* up/ thin
* y-int (x=0) (0, 4)
* vertex (h, k) (-2, -4)
* Axis of symmetry x= -2
* x-int (y=0)
$x=-2\pm\sqrt{2}$



50. Graph $y=-\frac{1}{2}(x-1)^2+3$

* down/ wide
* y-int (x = 0) (0, 2.5)
*vertex (h, k) (1, 3)
* Axis of symmetry x = 1
*x-int (y=0)
$x=1\pm\sqrt{6}$