

## Hammond Pre-AP Algebra 2: Sem 1 Final (Study Guide) Answer Section

### SHORT ANSWER

1. yes;  $\frac{2}{3}$
2. yes; 5
3.  $-3(x-4)(x+3)$
4.  $4x(2x+5)$
5.  $(5x-2)^2$
6. 64
7. minimum value: ~~-19~~  $-38$   
range:  $y \geq$  ~~-19~~  $-38$
8. 275
9.  $\frac{1}{2}, 2$
10.  $\frac{7}{8} \pm \frac{\sqrt{161}}{8}$
11.  $\frac{-20+48i}{52} = -\frac{5}{13} + \frac{12}{13}i$
12. -5
13.  $2+6i$
14.  $-12-i$
15.  $y = 2x^2 - 4x + 3$
16.  $y = (x-4)^2 - 11$
17. quintic
18. 47 inches by 65.8 inches
19.  $-(x-3)(x+7)$
20.  $(x+2)(x+9)$
21.  $(5x+2)(x+5)$
22. vertex:  ~~$(-1, -11)$~~   $(-1, -22)$   
axis of symmetry:  $x = -1$
23. 4.53 seconds
24. 12.8 yards
25. The relative maximum is at  $(-6, 324)$  and the relative minimum is at  $(4, -176)$ .

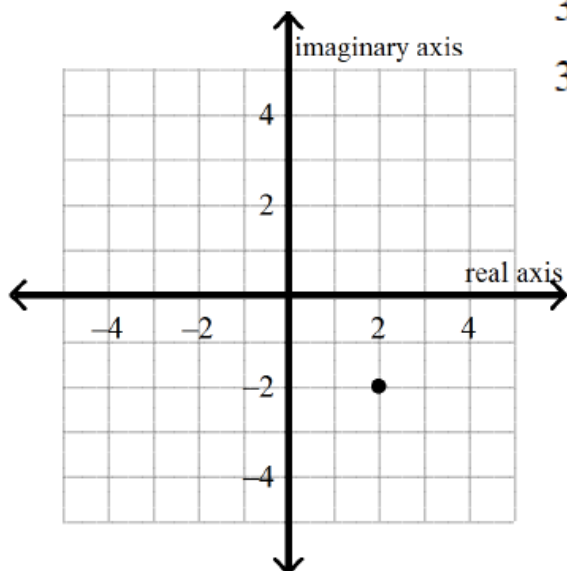
26.  $x(x - 4)(x - 2)$

27.  $2x(x - 5)(x - 3)$

28.  $(4x + 7)(4x - 7)$

29.  $-338$

30.



31. 12 feet

32. translate 2 units to the left, translate down 2 units,

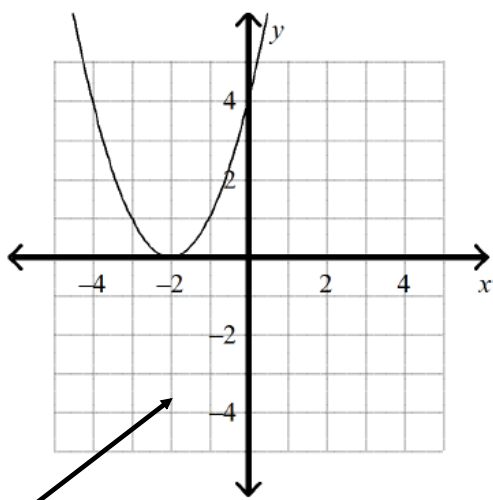
33.  $2 \pm \sqrt{4}i$   *$2 \pm 2i$*

34.  $-\frac{5}{4}i, \frac{5}{4}i$

35. 4

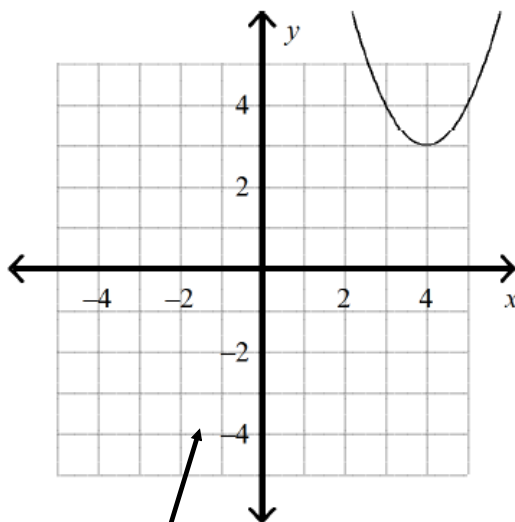
36.  $2, 1 + i\sqrt{3},$  and  $1 - i\sqrt{3}$

37.



$f(x)$  translated to the left 2 unit(s)

38.



$f(x)$  translated up 3 unit(s) and translated to the right 4 unit(s).

~~39. 1, 2, 3~~

40.  $4, -4, 5, -5$

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

42.  $-6, -7$

43.  $3i$

44.  $0, 3, 6, 9, 12$

45. 12.87 yards

46. 7.7 feet

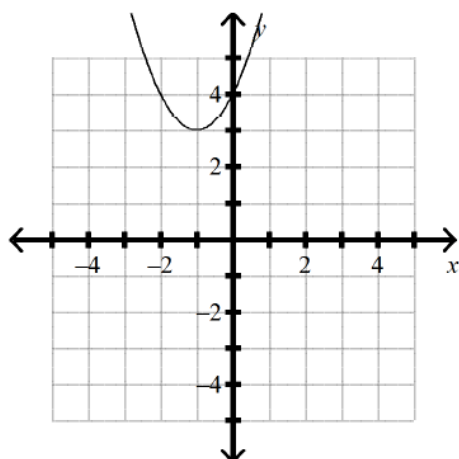
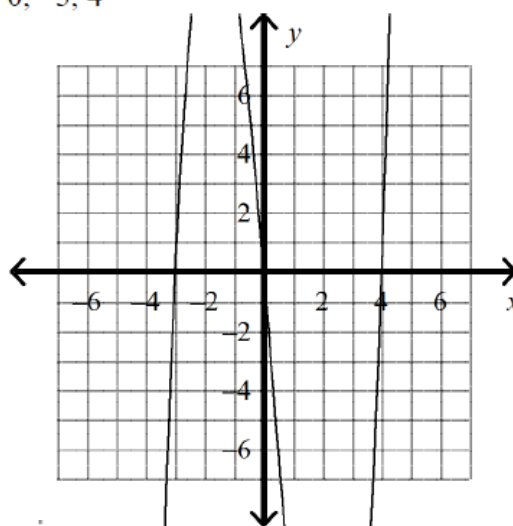
47.  $a_n = 2n + 4; 32$

48.  $a_n = a_{n-1} + 6$ , where  $a_1 = 7; 37$

49. yes; 5

50.  $1, -5$

51.

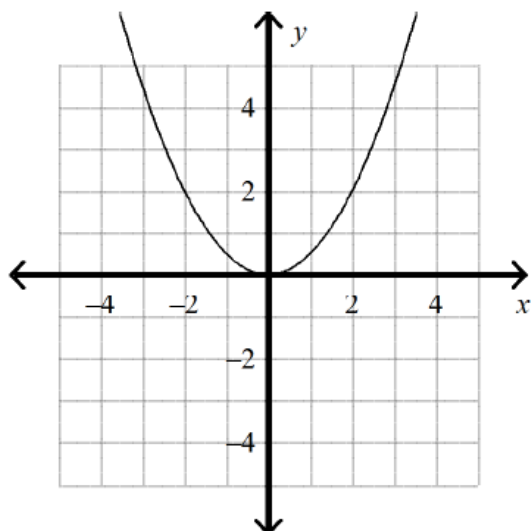
52.  $0, -3, 4$ 

53. minimum value:  $-5$   
 domain: all real numbers  
 range: all real numbers  $\geq -5$

54. 80

55. 28

56.



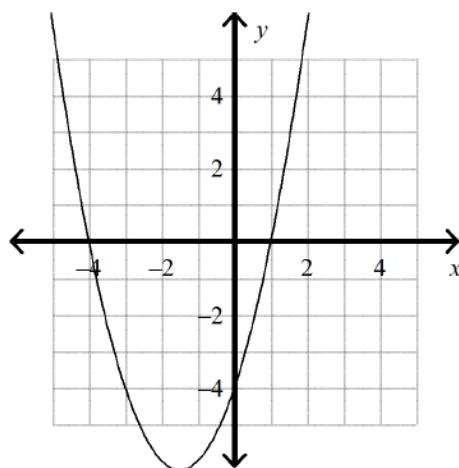
57.  $-2 \pm \sqrt{6}$

58.  $15x^5 - 12x^4$

59.  $a_n = -3 \cdot (-2)^{n-1}; -48$

$a_n = -3 \cdot (-2)^{n-1} ; -48$

60.

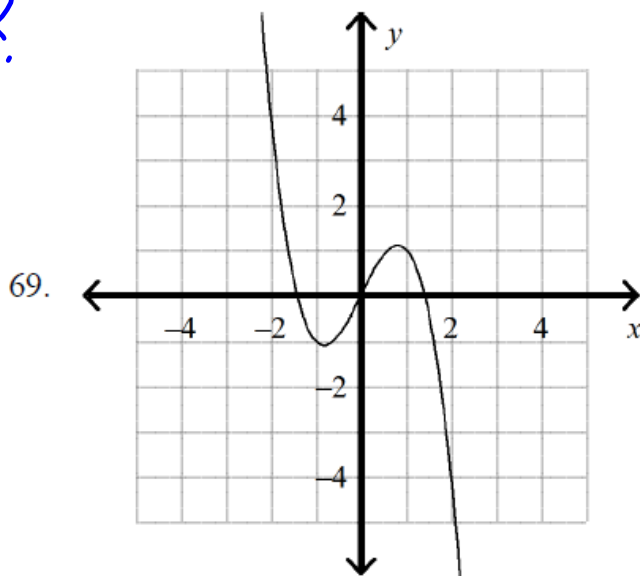


1, -4

61.  $\sqrt{5}, -\sqrt{5}$

62. vertex: (2, -3);  
axis of symmetry:  $x = 2$

- 63. The leading term is  $5x^6$ . Since  $n$  is even and  $a$  is positive, the end behavior is up and up.
- 64. The leading term is  $-3x^6$ . Since  $n$  is even and  $a$  is negative, the end behavior is down and down.
- 65. the number 0 is a zero of multiplicity 2; the numbers -4 and 3 are zeros of multiplicity 1
- 66. no real solutions
- 67.  $f(x) = x^3 - 5x^2 + 7x - 3$
- 68. linear model ?



There are two turning points.

70. 15 in. by 20 in. by 44 in.