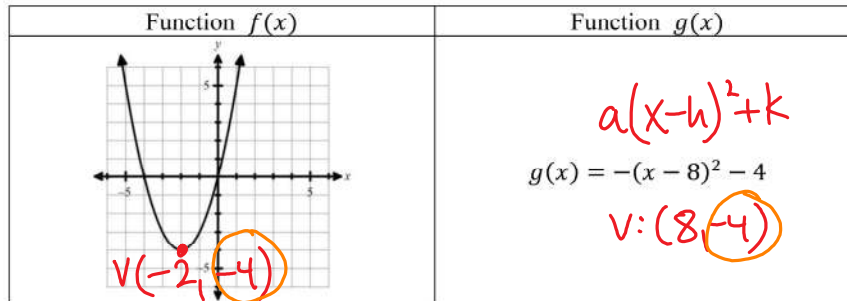


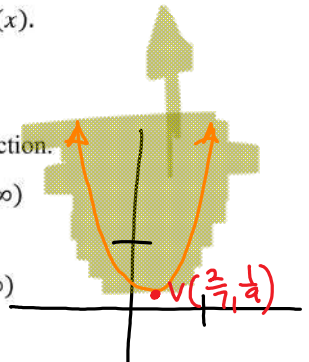
- B** 28. Compare the two functions represented below. Determine which of the following statements is true.



- ~~A~~ The functions have the same vertex.
- B** The minimum value of $f(x)$ is the same as the maximum value of $g(x)$.
- ~~C~~ The functions have the same axis of symmetry. $x=h$ $\textcircled{!}$
- ~~D~~ The minimum value of $f(x)$ is less than the maximum value of $g(x)$.

- D** 29. Given $(x) = 4(x - \frac{2}{7})^2 + \frac{1}{9}$, identify the domain and range of the function.

- A. Domain: $(-\infty, +\infty)$
Range: $(-\infty, -\frac{2}{7})$
- B. Domain: $[-\infty, +\infty]$
Range: $[\infty, -\frac{2}{7}]$
- D** Domain: $(-\infty, +\infty)$
Range: $[\frac{1}{9}, \infty)$



- C** 30. Which of the following is the quadratic equation for a parabola with a vertex of $(-8, 2)$ going through the point $(-13, 12)$?

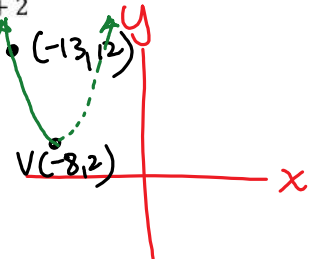
A. $y = -\frac{10}{441}(x+8)^2 + 2$

~~B~~ $y = -\frac{2}{5}(x-8)^2 + 2$

C $y = \frac{2}{5}(x+8)^2 + 2$

~~D~~ $y = \frac{10}{441}(x-8)^2 + 2$

opens up



H, I, L, M

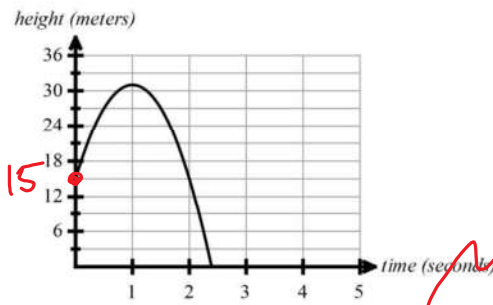
31. Which of the following statements describe key features of $f(x) = \frac{1}{3}x^2 + 6x - 8$?
Select all that apply.

- F. The axis of symmetry is $x = -1$.
- G. The minimum is $y = -8$.
- H. The axis of symmetry is $x = -9$.
- I. The minimum is $y = -35$.
- J. The y-intercept is $(0, 6)$.
- K. The vertex is $(-6, -8)$.
- L. The y-intercept is $(0, -8)$.
- M. The vertex is $(-9, -35)$.

(GC)

c : y intercept
h, k
V: $(-9, -35)$
axis
min

32. The path an object follows after it is thrown off a platform is modeled by the function graphed below.



If the equation $f(x) = -16x^2 + 32x + c$ also models this function, then what is the value of c ?

- A. $c = 0$
- B. $c = 1$
- C. $c = 15$
- D. $c = 31$

- B** 33. Which of the following systems of equations could a student use to write a quadratic function in standard form for the parabola passing through the points $(1, 4)$, $(3, -2)$, and $(-2, 17)$?

A.
$$\begin{cases} a + 4b + c = y \\ 9a - 2b + c = y \\ -4a + 17b + c = y \end{cases}$$

C.
$$\begin{cases} 2a + b + c = 4 \\ 6a + 3b + c = -2 \\ -4a - 2b + c = 17 \end{cases}$$

B.
$$\begin{cases} a + b + c = 4 \\ 9a + 3b + c = -2 \\ 4a - 2b + c = 17 \end{cases}$$

~~D.
$$\begin{cases} x^2 + 4x + c = y \\ 3x^2 - 2x + c = y \\ -2x^2 + 17x + c = y \end{cases}$$~~

$$ax^2 + bx + c = y$$

$$a(1)^2 + b(1) + c = 4$$

$$a + b + c = 4$$

- A** 34. Which of the following functions represent the parabola opening upwards with a compression factor of $\frac{1}{4}$ and x-intercepts $(-4, 0)$ and $(6, 0)$.

I.	$y = \frac{1}{4}(x + 4)(x - 6)$
II.	$y = \frac{1}{4}x^2 + \frac{5}{2}x - 6$
III.	$y = 4(x - 4)^2 + 6$
IV.	$y = \frac{1}{4}x^2 - \frac{1}{2}x - 6$
V.	$y = \frac{1}{4}(x - 1)^2 - \frac{25}{4}$

$$y = a(x - p)(x - q)$$

$$y = \frac{1}{4}(x - (-4))(x - 6)$$

$$y = \frac{1}{4}(x + 4)(x - 6)$$

.....
$$\frac{1}{4}(x^2 - 2x - 24)$$

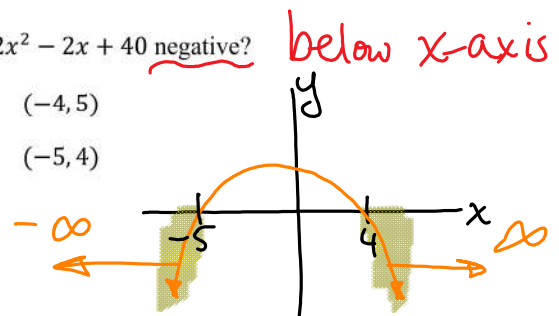
$$\frac{1}{4}x^2 - \frac{1}{2}x - 6$$

- A.** Options I, IV, and V
B. Options I, III, and V
C. Options I, III, and IV
D. Options II, IV, and V

- A** 35. Over which interval(s) is the function $f(x) = -2x^2 - 2x + 40$ negative?

- A.** $(-\infty, -5)$ and $(4, \infty)$
B. $(-\infty, -4)$ and $(5, \infty)$

- C.** $(-4, 5)$
D. $(-5, 4)$



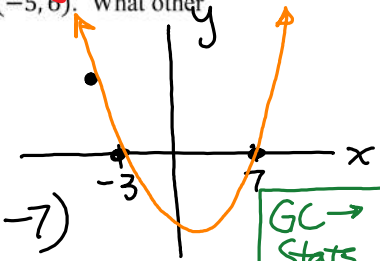
- D 36. A parabola has x -intercepts at -3 and 7 and goes through the point $(-5, 6)$. What other point is on the parabola?

- A. $(-8, 42)$ C. $(8, 44)$
~~B. $(-1, 22)$~~ **D. $(11, 14)$**

$y = a(x-p)(x-q)$
 $6 = a(-5-3)(-5-7)$
 $6 = a(-2)(-12)$
 $6 = 24a$

$\frac{1}{4} = a$

$y = \frac{1}{4}(x+3)(x-7)$



GC →
 Stats
 $\frac{1}{4}x^2 - x - 5.25$

Check points...

37. Simplify: $4i(10+i) - 6(2-3i)$
- A. $28 + 22i$ C. $-8 + 58i$
 B. $-16 + 58i$ D. $8 + 22i$

38. Simplify: $(i\sqrt{7} + 8)(i\sqrt{7} - 8)$
- A. $7i - 64$ C. -57
 B. $i\sqrt{7} - 64$ D. -71

39. Simplify: $\frac{2i(6-4i)}{3+3i}$
- A. $4i$ C. $60 + \frac{2}{3}i$
 B. $\frac{8}{3} + 4i$ D. $\frac{10}{3} + \frac{2}{3}i$

Algebra 2 Honors Semester 1 Instructional Materials 2021-22 Answers					
Topic 1 Linear Functions & Systems			Topic 10 Matrices		
1.	C	HSF.IF.B.5	13.	D	HSN.VM.C.7(+)
2.	D	HSF.IF.B.5	14.	A	HSN.VM.C.8(+)
3.	A	HSF.IF.C.7b	15.	B	HSN.VM.C.12(+)
4.	C	HSF.IF.B.5	16.	-2	HSN.VM.C.8(+)
5.	B	HSF.LE.A.2 HSF.IF.C.7b	17.	D	HSN.VM.C.8(+)
6.	A	HSF.BF.B.3	18.	F, H, I, J	HSN.VM.C.9(+)
7.	K, H	HSF.IF.B.4	19.	C	HSN.VM.C.12(+)
8.	B	HSF.IF.B.6	20.	C	HSN.VM.C.10(+)
9.	A	HSA.REI.D.11	21.	-99	HSN.VM.10(+)
10.	B	HSA.REI.D.11	22.	A	HSN.VM.10(+)
11.	C	HSA.REI.C.6	23.	C	HSN.VM.10(+)
12.	122.75	HSA.REI.C.6	24.	C	HSN.VM.C.12(+)
			25.	D	HSA.REI.C.9
			26.	F, J	HSA.REI.C.9
			27.	B	HSA.REI.C.9

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Algebra 2 Honors Semester 1 Instructional Materials 2021-22 Answers					
Topic 2 Quadratic Functions & Equations			Topic 3 Polynomial Functions		
28.	B	HSF.IF.B.4	49.	A	HSF.IF.B.4
29.	D	HSF.IF.B.4	50.	B	HSF.IF.B.4
30.	C	HSA.CED.A.2	51.	H, J	HSF.IF.B.4
31.	H, I, L, M	HSF.IF.B.4	52.	C	HSA.APR.A.1
32.	C	HSF.BF.B.3	53.	A	HSA.APR.A.1
33.	B	HSA.CED.A.2	54.	B	HSF.BF.A.1.b
34.	A	HSA.CED.A.2	55.	C	HSA.SSE.A.2 HSN.CN.C.8
35.	A	HSF.IF.B.4	56.	C	HSA.SSE.A.2
36.	D	HSA.CED.A.2	57.	A	HSA.APR.C.4
37.	B	HSN.CN.A.2	58.	B	HSA.APR.B.2
38.	D	HSN.CN.A.2	59.	D	HSA.APR.D.6
39.	D	HSN.CN.A.3(+)	60.	B	HSA.APR.B.2 HSF.IF.B.4
40.	B	HSA.SSE.A.3b	61.	C	HSA.APR.B.3 HSF.IF.C.7.d
41.	-14	HSA.REI.B.4a	62.	C	HSN.CN.C.1 HSA.APR.B.3
42.	C	HSA.REI.B.4b	63.	D	HSF.IF.C.7
43.	B	HSA.REI.B.4b HSN.CN.C.7	64.	B	HSN.CN.C.8(+) HSN.CN.C.9(+) HSA.APR.B.2 HSA.APR.B.3
44.	C	HSA.CED.A.2 HSN.CN.C.7	65.	A	HSN.CN.C.8(+) HSN.CN.C.9(+) HSA.APR.B.2 HSA.APR.B.3
45.	D	HSA.CED.A.2 HSA.REI.B.4	66.	C	HSN.CN.C.9(+)
46.	A	HSA.RE.IC.7	67.	D	HSF.BF.B.3
47.	52.5	HSA.REI.C.7 HSA.REI.D.11	68.	D	HSF.IF.B.4 HSF.BF.B.5
48.	B	HSA.REI.D.11 HSA.REI.D.12			

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