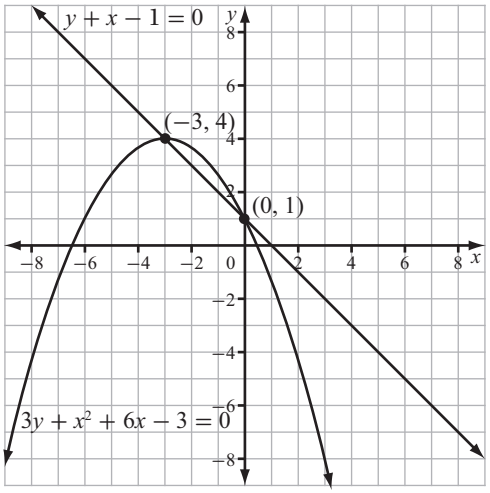
Final Exam Answers

Multiple Choice and Numerical Response Answers

1. B
2. C
3. A
4. C
5. B
6. C
7. D
8. 60°
9. 320°
10. C
11. B
12. C
13. A
14. A
15. B
16. B
17. C
18. −0.5
19. 3
20. D
21. D
22. C
23. A
24. B
25. D
26. D
27. B
28. B
29. C
30. 4
31. C
32. A
33. 2
34. B
35. C
36. 17
37. 10
38. A
39. D
40. A
41. D
42. B
43. D
44. A
45. A
46. C
47. C
48. D
49. A
50. A
51. A

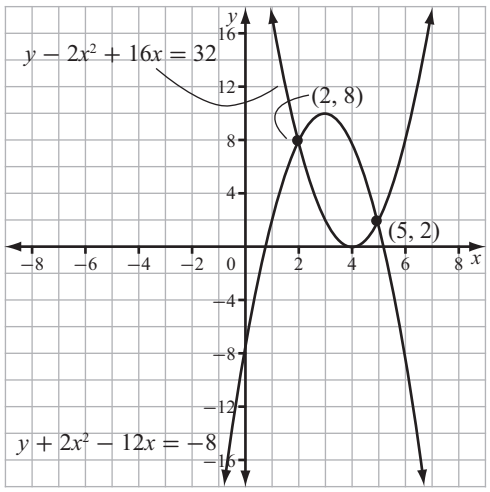
Written Response Answers

1. a)



The points of intersection, (−3, 4) and (0, 1), represent the two solutions to the system of equations.

b)



The points of intersection, (2, 8) and (5, 2), represent the two solutions to the system of equations.

2. a) The points of intersection are (2, 3) and (–1, 18). They represent the two solutions to the system of equations.

b) The points of intersection are (5, 43) and (2, 7). They represent the two solutions to the system of equations.

3. Example:

a) Let x and y represent the two numbers: $6.34 \leq x \leq 23.66$ and $6.34 \leq y \leq 23.66$.

b) This problem is an example of an infinite number of solutions for a system of quadratic equations. By using inequalities, you can show the entire range of possible solutions rather than two solutions.

4. a) $2y + 7x = 33$ cm

b) $10x^2 + 9x - 9 = 18y$ cm^2

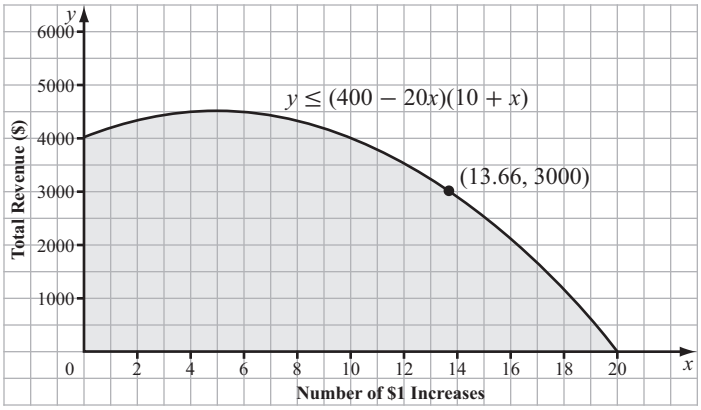
c) $y = \dfrac{-7x + 33}{2}$

$y = \dfrac{10x^2 + 9x - 9}{18}$

By solving the system for x and y, you are able to determine the dimensions of the triangle.

d) The solution to the system is (3, 6). The length of the hypotenuse is 15 cm and the lengths of the other two sides are 9 cm and 12 cm, respectively.

5. a)



b) Example: From the graph, it can be seen that revenue is at least $3000 where the number of $1 increases in the ticket price is less than or equal to 13 ($0 \leq x \leq 13.66$).

c) 127 concert goers

6. a)–c) Example: The graph of a function and the graph of its inverse are similar because the points are the same, but different because the variables are switched, or mirrored, over the line $y = x$.

7. Example: Choose a number of points from the graph of $f(x)$ and reflect them about the line $y = x$. Another method is to create a table of values and switch the x-values and y-values.

8. Example: Choose a number of points from the graph of $\dfrac{1}{f(x)}$ and reflect them about the line $y = x$. Another method is to create a table of values and switch the x-values and y-values.