

## Final Exam



The test answer keys provide answers only.

Worked solutions for these problems are located in the Digital Pack.

1)

A)  $2x^2 m^2$

B)  $(6x) m$

C)  $(2x + 2) m$

D)  $x = 3$

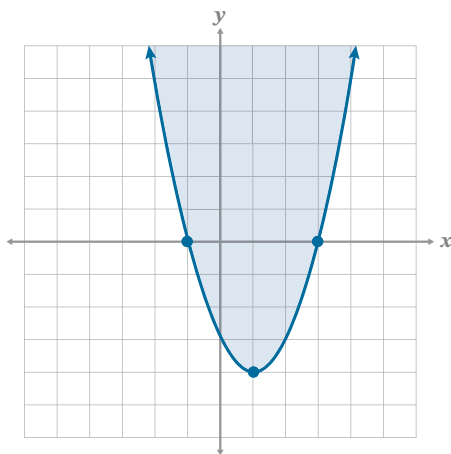
2)

A)  $-2(x - 1)^2 = -8$

B)  $x = -1, 3$

The solutions represent the  $x$ -intercepts when the equation is graphed.

C)



D) Sample:

The equation (in part B) has 2 solutions because it is a parabola that intersects the  $x$ -axis at two points. The inequality (in part C) intersects the  $x$ -axis at the same two points as the parabola in part B. However, an inequality has an infinite number of solutions that is represented by the shaded region, including  $x = -1, 3$ .

The domain of both the equation and the inequality are all real numbers. They also share the same axis of symmetry at  $x = 1$ .

Since the value of  $a = -2$  for the equation the parabola has a maximum point at  $(1, 8)$ . This makes the range  $(-\infty, 8]$ . The inequality has a minimum vertex at  $(1, -4)$ . This range is  $[-4, \infty)$ .

3) B

13) A

23) A

33)

- $2^{\frac{1}{2}}x^{\frac{3}{2}}$   
  $\frac{x}{2}$   
  $x\sqrt{2x}$   
  $\sqrt{2x^3}$

4) C

14) C

24) B

34)

- 1  
 2  
 5  
 10

5) C

15) D

25) A

6) A

16) A

26) C

7) D

17) C

27) B

8) C

18) D

28) D

9) B

19) D

29) C

10) C

20) C

30) B

11) B

21) C

31) A

35)

- Two addition symbols.  
 One addition and one subtraction symbol.  
 Two subtraction symbols  
 Cannot be determined without values for  $a$ ,  $b$ , and  $c$ .

12) B

22) D

32) D