### Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EOC Practice Problems**

1. Factor the expression 16a2 – 81.
2. Factor the expression 12x2 + 14x – 6.

Solve using the best method:

1. 3x2 – 147 = 0
2. x2 – x = 12
3. 5x2 – 6x – 8 = 0
4. What is a common factor for the expression 24x2 + 16x + 144?
5. 16 B. 8x C. 3x2 + 2x + 18 D. 8(x – 2)(3x2 + 9)
6. Which of these shows the complete factorization of 6x2y2 – 9xy – 42?

A. 3(2xy2 – 7)(xy2 + 2) C. 3(2xy – 7)(xy + 2)

B. (3xy + 6)(2xy – 7) D. (3xy2 + 6)(2xy2 – 7)

1. What are the zeros of the function represented by the quadratic expression 2x2 + x – 3?
2. x = -3/2 and x = 1 C. x = -1 and x = 2/3
3. x = -2/3 and x = 1 D. x = -1 and x = -3/2
4. Which of these is the result of completing the square for the expression x2 + 8x – 30?

A. (x+4)2 – 30 B. (x+4)2 – 46 C. (x+8)2 – 30 D. (x+8)2 – 94

1. A garden measuring 8ft by 12ft will have a walkway around it. The walkway has a uniform width, and the area covered by the garden and the walkway is 192 square feet. What is the width of the walkway?
2. 2ft B. 3.5ft C. 4ft D. 6ft
3. The formula for the area of a circle is A = πr2. Which equation shows the formula in terms of r?
   1.  B.  C.  D. 
4. What are the solutions to the equation 2x2 – 2x – 12 = 0?
   1. x = -4, x = 3 B. x = -3, x = 4 C. x = -2, x = 3 D. x = -6, x = 2
5. What are the solutions to the equation 6x2 – x – 40 = 0
6. x = -8/3, x = -5/2 C. x = -8/3, x = 5/2
7. x = 5/2, x = 8/3 D. x = -5/2, x = 8/3
8. An object is thrown in the air with an initial velocity of 5 m/s from a height of 9m. The equation h(t) = -4.9t2 + 5t + 9 models the height of the object in meters after t seconds.

About how many seconds does it take for the object to hit the ground? Round your answer to the nearest tenth of a second.

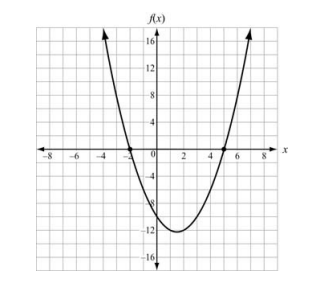
* 1. 0.940 secs B. 1.50 secs C. 2.00 secs D. 9.00 secs

1. What explicit expression can be used to find the next term in this sequence?

2, 8, 18, 32, 50, …

* 1. 2n B. 2n + 6 C. 2n2 D. 2n2 + 1

1. Which of these is an even function?
   1. f(x) = 5x2 – x B. f(x) = 3x3 + x C. f(x) = 6x2 – 8 D. f(x) = 4x3 + 2x2
2. Which statement BEST describes how the graph of g(x) = -3x2 compares to the graph of f(x) = x2?
   1. The graph of g(x) is a vertical stretch of f(x) by a factor of 3.
   2. The graph of g(x) is a reflection of f(x) across the x-axis.
   3. The graph of g(x) is a vertical shrink of f(x) by a factor of 1/3 and a reflection across the x-axis.
   4. The graph of g(x) is a vertical stretch of f(x) by a factor of 3 and a reflection across the x-axis.
3. What is the end behavior of the graph of f(x) = -0.25x2 – 2x + 1?
   1. As x increases, f(x) increases. As x decreases, f(x) decreases.
   2. As x increases, f(x) decreases. As x decreases, f(x) decreases.
   3. As x increases, f(x) increases. As x decreases, f(x) increases.
   4. As x increases, f(x) decreases. As x decreases, f(x) increases.



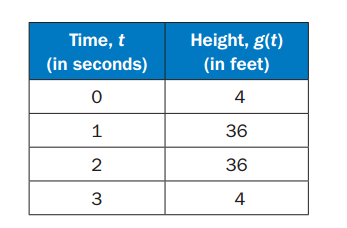
1. Use the graph to answer the question.

Which function is shown in the graph?

* 1. f(x) = x2 – 3x – 10
  2. f(x) = x2 + 3x – 10
  3. f(x) = x2 + x – 12
  4. f(x) = x2 – 5x – 8

1. The function f(t) = -16t2 + 64t + 5 models the height of a ball that was hit into the air, where t is measured in seconds and h is the height in feet. This table represents the height, g(t), of a second ball that was thrown into the air.

Which statement BEST compares the length of time each ball is in the air?



1. The ball represented by f(t) is in the air for about 5 seconds, and the ball represented by g(t) is in the air for about 3 seconds.
2. The ball represented by f(t) is in the air for about 3 seconds, and the ball represented by g(t) is in the air for about 5 seconds.
3. The ball represented by f(t) is in the air for about 3 seconds, and the ball represented by g(t) is in the air for about 4 seconds.
4. The ball represented by f(t) is in the air for about 4 seconds, and the ball represented by g(t) is in the air for about 3 seconds.