**Rational Functions**

**April 2015**

47. The domain of f(x) = 2/(x2 – 9x) is the set of all real numbers EXCEPT:

A. -2/9

B. 3

C. -3 and 3

D. 0 and 3

E. -3, 0, and 3

60. The equation y = (2x2 – 18)/(x2 – 5x) has 2 vertical asymptotes and 1 horizontal asymptote. What is the horizontal asymptote?

F. x = 0

G. x = 3

H. x = 9

J. y = 0

K. y = 2

**June 2015**

59. Which of the following linear equations gives the vertical asymptote for the graph of y = (201x + 202)/(203x + 204) in the standard (x, y) coordinate plane?

A. x = -201/203

B. x = -202/201

C. x = -202/204

D. x = -204/203

E. x = -403/407

**June 2016**

49. The graph of y = (2x – 5)/(x + 3) in the standard (x, y) coordinate plane has a vertical asymptote with equation x = ?

A. -3

B. -5/3

C. 2

D. 5/2

E. 8

**April 2016**

49. In the standard (x, y) coordinate plane, for what value(s) of x, if any, is there NO value of y such that (x,y) is on the graph of y = (x – 3)/[(x + 3)(x + 2)(x - 2)]

A. -3, -2 and 2 only

B. -2, 2, and 3 only

C. -3 only

D. 3 only

E. There are no such values of x. =

**December 2016**

52. At what point in the standard (x, y) coordinate plane do the asymptotes of the function y = (2x(x + 2))/(x – 3), graphed below, intersect?

[PICTURE]

F. (-7/3, 3)

G. (7/3, 10)

H. (3, 10)

J. (3, 16)

K. (3, 31)

**June 2017**

50. The graph of f(x) = (x – 3)/(x2 – 2x – 3) is shown below. What is the domain of f(x)?

[PICTURE]

F. {x|x =/= -1}

G. {x|x =/= 2}

H. {x|x =/= 3}

J. {x|x =/= -1 and x=/= 3}

K. {x|x =/= 0 and x =/= 2}

59. The graph in the standard (x,y) coordinate plane below is the graph of the one of the following functions. Which one?

[PICTURE]

A. g(x) = x(x-6)(x+4)

B. h(x) = x2(x+6)(x-4)

C. n(x) = x2(x+6)3(x-4)

D. p(x) = x2(x-6)3(x+4)

E. q(x) = x3(x-6)2(x+4)