#1 Solve the inequality and express the solution as an interval.

1. -x2 + 12x – 32 ≤ 0
2. 5x2 – 32x +12 ≥ 0
3. -2x2 + 11x 12 ≥ 0
4. (x + 3)/(x - 4) ≤ 0

#2 Solve the inequalities algebraically and write the solution as an interval.

1. |x + 2| ≤ 6
2. |x – 25|≥ 89

#3 Given each function: Find the x- and y-intercepts, the domain, the vertical and horizontal asymptotes, and then sketch a complete graph of the function.

1. f(x) = (9x – 1)/(x +5)
2. f(x) = (7x – 9)/(4x + 9)
3. f(x) = (x + 5)/(x – 5)

#4 Find the difference quotient f(x +h) – f(x)/h (assume h ≠ 0 ) for:

1. f(x) = 4x2 – 6x – 33
2. f(x) = -5x2 – x + 4
3. f(x) = 5x2 + 4x + 3

#5 Find the exact sum of the infinite geometric sequence.

1. {8, -32, 128, -512, 2048…}
2. {7, -21, 63, -189, 567…}
3. {6, 24/5, 96/25, 384/125, 1536/625…}

#6 Find the inverse for the following function.

1. y = 3 - 8x
2. y = (5)/(7x + 1)
3. y = (4x – 5)/(6x +1)

#7 Use the Binomial Theorem to write the following terms in simplest form.

1. (4x + y/4)13
2. (5x – y/5)16

#8 Polynomial division.

1. (10x3 – 33x2 – 15x +28) ÷ (-2x + 7)
2. (-2x3 - 15x2 +13x +47) ÷ (x + 8)
3. (10x3 – 2x2 – 53x – 41) ÷ (-5x -4)

9# Solve the logarithmic equations

1. Log5(7x) = 15
2. Log7(x +7) + log7(x -8) = 3

# 10 For f(x) = 5x + 1 and g(x) = x2 – 12x + 35.

1. Compute (f ◦ g) (3)
2. Compute (g ◦ f) (-3)
3. Simplify (f ◦ g) (x)
4. Simplify (g ◦ f) (x)