Find  for the following functions.

 1. f(x) = 2x + 1 g(x) = -3x + 4

 2. f(x) = 2x2 + 1 g(x) = 3x – 5

 3. f(x) =  g(x) = x2 + 1

 4. f(x) = 3x – 4 g(x) = 

 5. f(x) =  g(x) = 

6. Find for #1,  for #3, and  for #5.

Decompose H(x) = ; H(x) = .

Applications:

Rocket Launch: At a distance of 4,000 ft from the launch site, a spectator is observing a rocket being launched. If the rocket lifts off vertically and is rising at a speed of 600 ft/sec when it is at an altitude of 3,000 ft, find a general equation relating the three distances.

![C:\Users\gclement\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\N1SQ69T4\MP900409423[1].jpg]()Temperatures: The function C(F) = 5/9(F – 32) converts a temperature in degrees Fahrenheit, F, to a temperature in degrees Celsius, C. The function K(C) = C + 273, converts a temperature in degrees Celsius to a temperature in kelvins, K. Find a function that converts a temperature in degrees Fahrenheit to a temperature in kelvins. Then convert 75ºF to kelvins.

![C:\Users\gclement\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\EF4HS5WH\MP900442357[1].jpg]()Volume of a Balloon: The volume (in cubic meters) of a hot-air balloon is given by the formula V(r) = 4/3πr3. If the radius r is increasing with time t (in seconds) according to the formula r(t) = 2/3t, t ≥ 0, find the volume V as a function of the time t.