Bridges Math 122A
Spring 2017

Name _____ _____
(GIVEN) (LAST)

LINEAR FUNCTIONS [1.1]

1. Factor: $3y^2 + 4 - 13y$

2. Solve the following equations for the variable m in terms of the constant c:
   (a) $7m^2 - 12mc - 4c^2 = 0$ (b) $-8cm + 27m - 9c = -24m^2$

3. For constants k and v, find the equation of the line containing the point $(v, -0.5)$ and perpendicular to the line $7x - 3y = k$.

4. Let $h(a) = \frac{16-a^2}{a^2+4a}$
   (a) Using interval notation, what is the domain of h?

   (b) Find the solutions to each equation below:
   (i) $h(a) = 0$ (ii) $h(a) = 1$ (iii) $h(a) = -1$

   (c) What is the *a-intercept*?

   What is the $h(a)$*-intercept*?

5. Using your calculator, graph the function $f(x) = x^3 - 0.75x^2 - 9x$ on the interval $[-3, 4]$.
   (a) To the nearest tenth, on what interval(s) is f increasing?

   (b) To the nearest tenth, on what interval(s) is f decreasing?