

# Math 2143 - Brief Calculus with Applications

## Quiz #1 - 2009.02.03

### Solutions

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1. Find an equation for the line with slope -2 which passes through the point (3, 1).

$$y - 1 = -2(x - 3)$$

2. Find an equation for the line which passes through the points (-3, 2) and (3, 1).

First we find  $m$ ,

$$m = \frac{2 - 1}{-3 - 3} = -\frac{1}{6},$$

so we have

$$y - 2 = -\frac{1}{6}(x + 3).$$

3. Given that  $f(x) = \frac{2+x}{x^2+1}$ , answer the following:

- a) Compute  $f(3)$

$$f(3) = \frac{2+3}{9^2+1} = \frac{5}{10} = \frac{1}{2}.$$

- b) Compute  $f(3+h)$

$$f(2+h) = \frac{2+(3+h)}{(3+h)^2+1} = \frac{5+h}{(3+h)^2+1}$$

4. Construct a function with domain  $D = \{\text{vowels in the English alphabet}\}$  and range  $R = \{\text{set of all colors}\}$ .

Answers will vary!