

## And Review topics for the Final exam

## 1. Fill in the blanks

A function consists of three things

- A set called the **domain**
- A set called the **range**

A **rule** which associates **each** element of the domain with a **unique** element of the range.

2. A zero of a function  $f$  is a **domain** element  $k$  for which  $f(k) = 0$ .

3. What is the period of  $3\sin(5x + \frac{\pi}{3})$ ?  $\frac{2\pi}{5}$

4. Determine whether  $(2, 3)$  is on the graph of the function whose rule is  $f(x) = \frac{2x - 1}{4 - 3x}$ .

Neatly show your work. No work – No credit. End your work with a clearly stated conclusion.

$(2, 3)$  is on the graph of  $f$  if and only if  $f(2) = 3$ . So we evaluate  $f(2)$ .

$$f(2) = \frac{2(2) - 1}{4 - 3(2)} = \frac{3}{-2} \neq 3. \text{ Therefore } (2, 3) \text{ is not on the graph of } f.$$

5. The equation  $\sin \beta = \frac{\tan \beta \cot \beta}{\csc \beta}$  is an identity. What is the solution set for this equation?

Hint: This question should take you about 2 seconds.

Because the equation is an identity it is true for all values of  $\beta$ . Therefore its solution set is the set of Real numbers **R**.