



**Algebra & Functions (Maths 201-016)**

1. If  $f(x) = x^2 + 5x$  and  $g(x) = 2 - 5x$ , find

- (a)  $f(-2) - g(\frac{1}{3})$ , and
- (b) the value(s) of  $x$  so that  $f(x) = 0$ .

**Answer:**

(a)  $-\frac{19}{3}$  (b)  $0, -5$

2. Solve  $9^{2-x} = 27^{x-2}$ .

**Answer:**  $x = 2$

3. If  $\csc \theta = \sqrt{5}$  (for an acute angle  $\theta$  of a right triangle), find the values of the other five trigonometric functions.

**Answer:**

$$\sin \theta = \frac{1}{\sqrt{5}} = \frac{\sqrt{5}}{5}; \cos \theta = \frac{2}{\sqrt{5}} = \frac{2\sqrt{5}}{5}; \tan \theta = \frac{1}{2}; \cot \theta = 2; \sec \theta = \frac{\sqrt{5}}{2}$$