

### Questions

1. Let  $f(x) = 3x^2 - 2$  and  $g(x) = 4x - 2$  find the following:

(a)  $f(x + h) - f(x)$

(b)  $g(x + h) - g(x)$

(c)  $f(a - 5)$

2. Determine the domain and range of the relation  $x + 3 = |y|$ .

3. Determine the domain and range of the relation  $x + 2 = \sqrt{y}$

4. Let  $f = \{(2, 6), (3, 8), (4, 5)\}$  and  $g(x) = 3x + 5$ . Find the following

(a)  $f(2)$

(b)  $g(2)$

(c)  $f(3) - g(3)$

(d)  $x$ , if  $f(x) = 8$

(e)  $x$ , if  $g(x) = -4$

5. In 1988 tropical forest covered 1970 million hectares. In 2008 tropical forest covered 1768 hectares. What was the average rate of change in hectares per year of the area of tropical forest over those 20 years? If deforestation continued at this rate, when would the tropical forest be totally eliminated? Sketch the situation.