

**Strand 5 Chapter 1 Functions**

1. I know that the domain is the set of all input numbers.
2. I know that the codomain is the set of all possible outcomes.
3. I know that the range is the set of actual outcomes.
4. I know that the set of **x input** values into a function are known as the **Domain**
5. I know that the set of corresponding **y output** values are known as the **Range**.
6. I know that the input and output values can be put together in as (x,y) 'couples' or 'ordered pairs' and that these ordered pairs can be plotted to graph the function.
7. I know that real functions have no 2 input values the same.
8. I know that there are 3 ways to write a function

$$f(x) = x + 1 \text{ (f of } x = x + 1)$$

$$f:x \rightarrow x + 1 \text{ (f is the function such that } x \text{ maps to } x + 1)$$

$$y = x + 1$$

9. I know that  $f(1)$  means 'find the output value  $y$  when the input value  $x$  is = 1'
10. I know that 'If  $f(x)=2x-3$  , solve  $f(x)=7$ ' means I have to let  $7=2x-3$  and solve for  $x$ . i.e. This means...find the input value  $x$  given when the output value  $y$  is 7.
11. I know that a relation is a function if the set of domain values in the ordered pairs are unique.
12. I know how to apply the 'vertical line test' to test for a function.  
**Example 1, 2, 3 and 4 Page 4.**  
**Ex 1.1 Q2 – Q20 Even Page 6**
13. I know that in general, if  $f$  and  $g$  are two functions, then  $fg(x) \neq gf(x)$   
**Example 1 and 2 page 10**  
**Ex 1.2 Q2 – Q18 Even Page 11**
14. I understand the terms 'Injective', 'Surjective' and 'Bijective'.  
**Example 1 and 2 Page 15**  
**Ex 1.3 Q1 – Q15 Odd Page 16**
15. I know that for every couple (a,b) that  $f$  creates,  $f^{-1}$  (inverse function) will create the couple (b,a) and I know how to find the inverse of a function.  
**Example 1 and 2 Page 20**
16. I am familiar with the term 'restricted domain'  
**Example 3 Page 21**  
**Ex 1.4 Q2 – Q20 Even Page 22**

17. I know how to find the limit of a function for a value  $a$  and infinity and can find the slope of the tangent to a curve at any point on the curve.

**Example 1, 2 and 3 Page 25**

18. I know how to determine if a function is continuous.

**Example 4 Page 28**

**Ex 1.5 Q2 – Q14 Even Page 28**

19. I know how to find the points where the curve crosses the x-axis and y-axis, the turning point and can sketch the graph of a given function.

**Example 1, 2 and 3 Page 31**

20. I can find the equations for given cubic graphs.

**Example 4 Page 34**

**Ex 1.6 Q1 – Q21 Page 34**

21. I am familiar with Exponential and Logarithmic functions.

**Example 1, 2, 3 and 4 Page 38**

**Ex 1.7 Q2 – Q20 Page 41**

22. I am familiar with plotting related graphs.

**Example 1 Page 46**

**Ex 1.8 Q2 – Q10 Page 46**