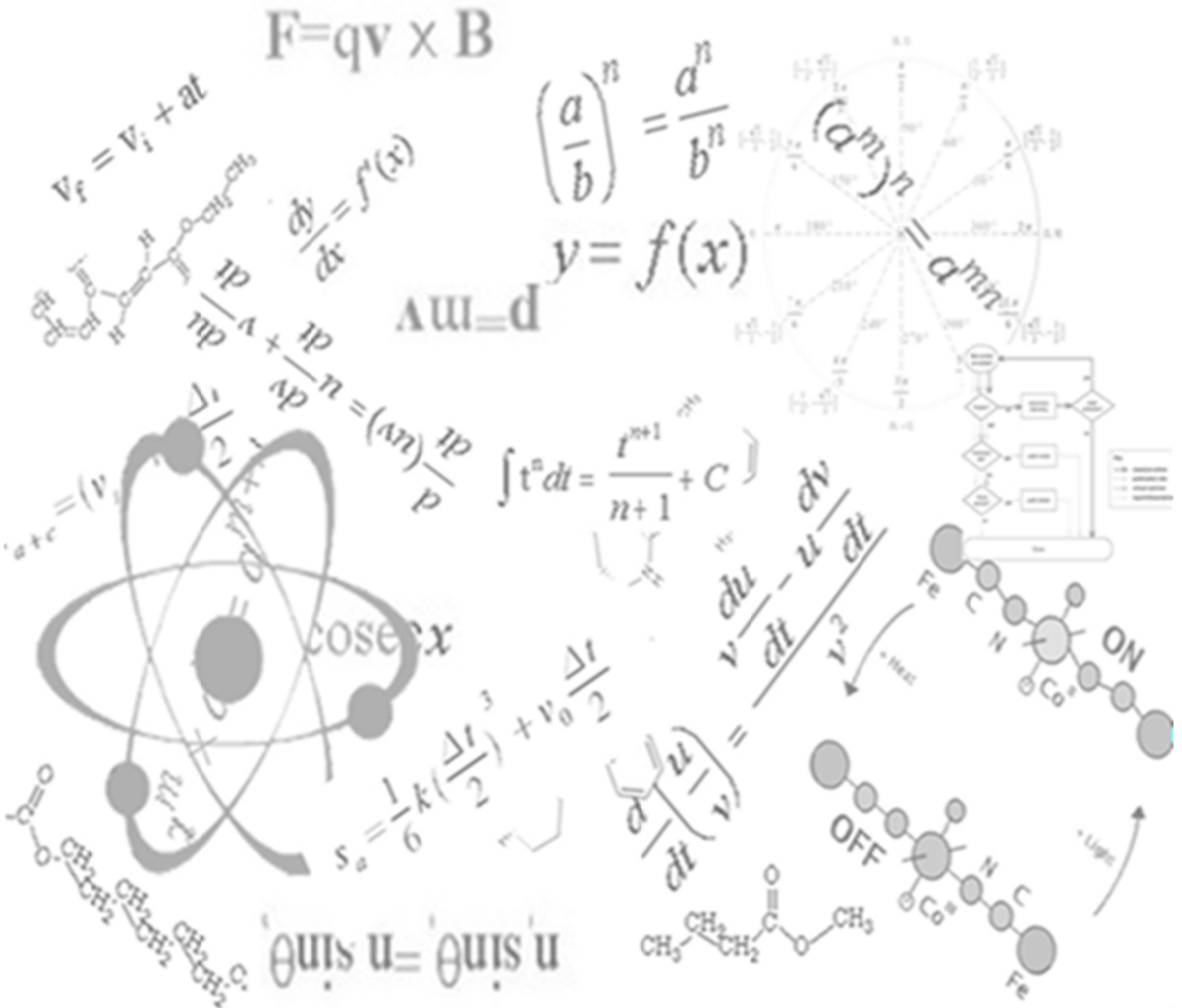




Year 11- Mathematics Advanced

Real functions and their graphs



Real function of a real variable and their geometrical representation Exam /23

1. (2 marks)

Prove that $f(x)=3x(x^2 + 2)$ is an odd function.

2. (2 marks)

Prove that $f(x)=\frac{1}{\sqrt{x^2-4}}$ is an even function.

3. (1 marks)

Find the Domain for $y=\frac{x^2-9}{x-3}$

4. (3 marks)

Find the domain and range of $y=2x(3-x)$

5. (5 marks)

Sketch $f(x)=\frac{-2}{x^2-1}$

6. (2 marks)

Sketch the parabola $y = x^2 + 2x + 3$

this is a curve with a bounce at $x=-1$ shifted up by 2:

7. (2 marks)

Sketch the circle $(x - 4)^2 + (y - 3)^2 = 4$

8. (2 marks)

Sketch the curve $y = 2e^{-3x}$

9. (2 marks)

Sketch the curve $y = |4 - x|$

10. (2 marks)

Given $f(x)=4x^3 - 3x^2 - 7x + c$
find c given $f(1)=0$