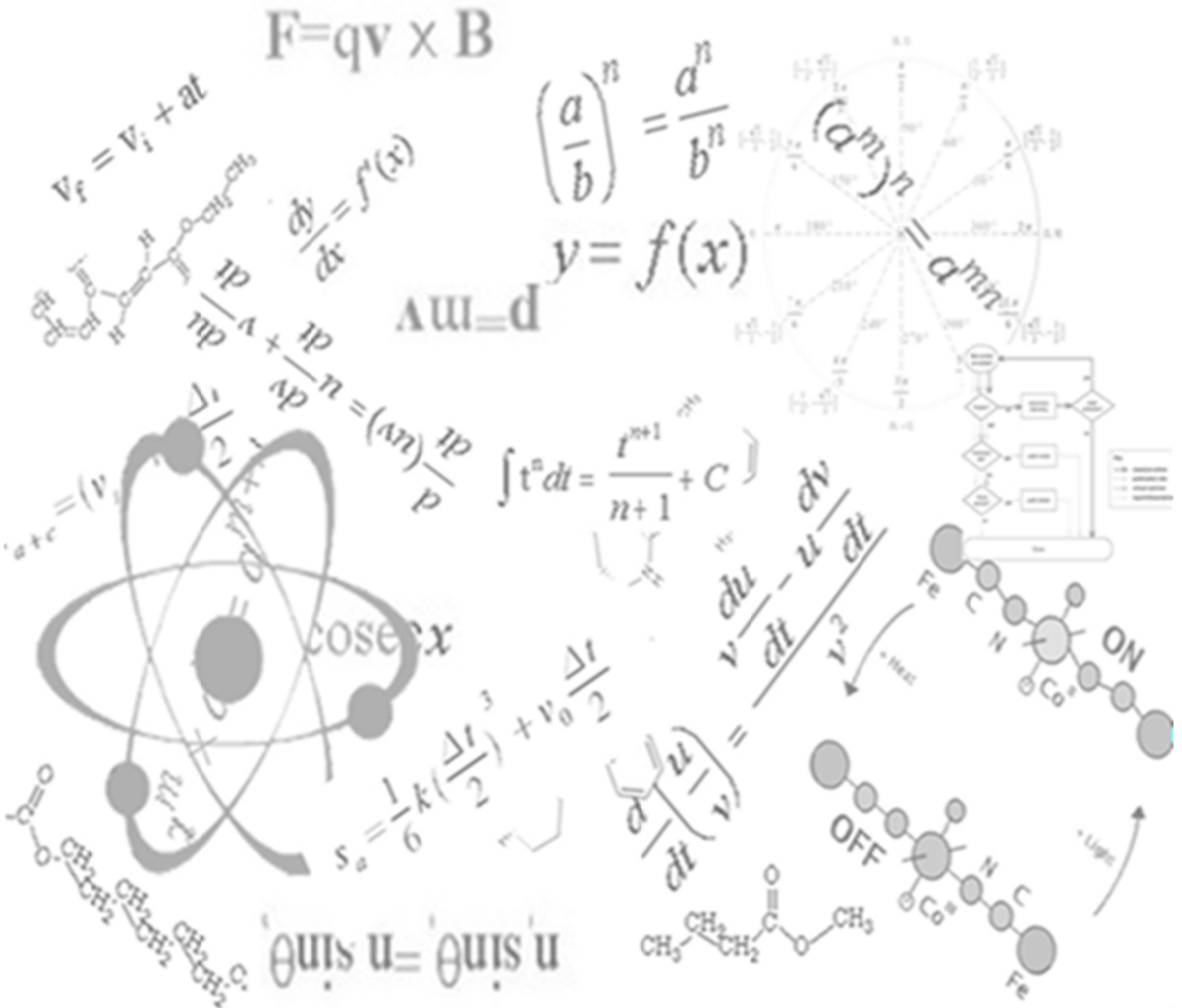




Year 12- Mathematics Advanced

Trigonometric ratios



Trigonometric Ratios Exam

/22

1. (2 marks)

Evaluate in exact form: $\cos 135 + \operatorname{cosec} 60$

2. (2 marks)

A large tree growing on level ground, casts a shadow of length 82 metres when the angle of elevation of the sun is 61° . Calculate the height of the tree correct to 3 significant figures.

3. (2 marks)

solve $\sin x = -1/2$ $0 \leq x \leq 360$

4. (3 marks)

solve $2\cos^2 x = 2 + \sin x$ $0 \leq x \leq 360$

5. (1 marks)

Show that $\tan \theta + \cot \theta = \frac{1}{\sin \theta \cos \theta}$

6. (3 marks)

using question 5, solve:

$$\frac{1+\cot \theta}{\operatorname{cosec} \theta} - \frac{\sec \theta}{\tan \theta + \cot \theta} = -1 \quad 0 \leq \theta \leq 360$$

7. (2 marks)

Sketch $y = 1/2 \sin 1/2x$

8. (2 marks)

Sketch $y = \cos(1 - 2x)$

9. (3 marks)

Solve $2\cos^2 x + 3\cos x + 1 = 0$ $0 \leq x \leq 360$

10. (2 marks)

Find the exact value of $\frac{\tan 60 \sin 45 \cos 45}{\sec 30}$