Paper 2

Q1 Line
Q2 Probability
Q3 Circle
Q4 Probability
Q5 Trigonometry

$$\tan(A-B)=\frac{\tan A-\tan B}{1+\tan A\tan B}$$

$\tan\alpha=\frac{2}{3}$

$\tan(\alpha-\beta)=\frac{1}{3}$

$\beta=?$

may involve double angle formula as in tables

Q6 No theorem (short)

Q7 (150) Construction
Coordinate geometry

Q8 (55) Stats n prob. – Hypothesis test

Q9 3D Trig. Question (25)

95% confidence interval for population proportion?

$p=\hat{p}\pm E$ where $E=\frac{1}{\sqrt{n}}$ O.L. only

$p=\hat{p}\pm \underbrace{1.96}_{5\%\text{ level of significance}}E$ where $E=\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$ H.L.

Standard error (p.34)

95% confidence interval for the mean?

$\mu=\bar{x}\pm 1.96\frac{\sigma}{\sqrt{n}}$

Integration:

① $\int 3x^2\,dx = \frac{3x^3}{3} + c$

② $\int \sin 3x\,dx = -\frac{1}{3}\cos 3x + c$

③ $\int e^{2x} = \frac{1}{2}e^{2x} + c$

④ $\int_1^2 x\,dx = \left[\frac{x^2}{2} + c\right]_1^2 = \left[\frac{(2)^2}{2} + c\right] - \left[\frac{(1)^2}{2} + c\right]$

$= \frac{4}{2} - \frac{1}{2} = \frac{3}{2}$

⑤ $\int x e^{x^2} = \frac{1}{2}e^{x^2} + c$

Consider: if $y = e^{x^2}$; $\frac{dy}{dx} = 2x \cdot e^{x^2}$

if $y = \frac{1}{2}e^{x^2}$: $\frac{dy}{dx} = \frac{2}{2}x\,e^{x^2}$