

Fortify Sample Exam A

SPECIALIST MATHEMATICS Exam 1 Solutions

Question 1a.	Question 6
$\frac{1}{16} \operatorname{cis}\left(\frac{7\pi}{12}\right)$	$2\underline{i} - 2\underline{j} + \underline{k}$
Question 1b.	Question 7
$z = -1 \pm 2i$	$Q = \frac{20}{2^{\frac{t}{5}}}$

Question 2

95% CI = $15 \pm \frac{7}{75}$

Question 3

 $y = \frac{\sqrt{3}}{2}x - \frac{\pi\sqrt{3}}{8} + \frac{\pi}{6}$

Question 4

 $\sqrt{5+16 {
m e}^4}~{
m ms}^{-2}$

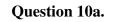
Question 5

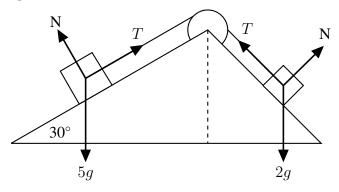
 $V = \pi(9 \log_{e}(3) - 8)$ units³

Question 8 $A = \frac{e}{e^2 - 1} \text{ units}^2$

Question 9

(-1, 1)





Question 10b.

$$a = g\left(\frac{5}{14} - \frac{\sqrt{2}}{7}\right) \,\mathrm{ms}^{-2} \,\mathrm{or} \,a = \frac{g(5 - 2\sqrt{2})}{14} \,\mathrm{ms}^{-2}$$

Question 10c.

$$T = \frac{5g}{7}(1+\sqrt{2}) \,\mathbf{N}$$