TSSM™
Creating VCE Success

Exam Practice Guide

Unit 1
Specialist Mathematics
Examination 2

SAMPLE

Key Features:

- ✓ 101 original examination style questions on all examinable topics.
- ✓ Full solutions and a marking guide to all questions.
- ✓ Separated into key topic areas within each Area of Study, enabling students to master one topic at a time.
- ✓ Written by VCE assessors who mark the real examinations.
- ✓ Excellent resource for examination practice.

Helping VCE students be the best they can be.

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AREA OF STUDY 2: Arithmetic

Topic 1 - Matrices

Question 1

If $A = \begin{bmatrix} \frac{1}{2} & -1 \\ 1 & -4 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & 6 \\ -4 & 9 \end{bmatrix}$, find X, such that $A + 4X = B$

A. $\begin{bmatrix} 10 & 28 \\ -20 & 52 \end{bmatrix}$

B. $\begin{bmatrix} -\frac{5}{8} & -\frac{7}{4} \\ \frac{5}{4} & -\frac{13}{4} \end{bmatrix}$

C. $\begin{bmatrix} \frac{5}{8} & \frac{7}{4} \\ -\frac{5}{4} & \frac{13}{4} \end{bmatrix}$

D. $\begin{bmatrix} -10 & -28 \\ 20 & -52 \end{bmatrix}$

E. $\begin{bmatrix} \frac{5}{2} & 7 \\ -5 & 13 \end{bmatrix}$

Question 2

Find det A when $A = \begin{bmatrix} \frac{2}{3} & 4 \\ -1 & -\frac{1}{4} \end{bmatrix}$

A. $\frac{23}{6}$

B. $\frac{2}{3}$

C. $-\frac{23}{6}$

D. $\frac{25}{6}$

E. $-\frac{25}{6}$

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Question 3

If $U=\begin{bmatrix}-2 & 4\\ 3 & -1\end{bmatrix}$, $V=\begin{bmatrix}5\\ -2\end{bmatrix}$ and $X=\begin{bmatrix}x\\ y\end{bmatrix}$, solve $UX = V$ for x and y.

A. $x=\frac{3}{10}$ and $y=-\frac{11}{10}$

B. $x=\frac{10}{11}$ and $y=\frac{3}{11}$

C. $x=0$ and $y=\frac{1}{3}$

D. $x=-\frac{3}{10}$ and $y=\frac{11}{10}$

E. $x=-\frac{10}{11}$ and $y=-\frac{3}{11}$

Question 4

Solve the following system of simultaneous equations

$$2w+6x-3y-2z=-1$$
$$-w+2x+y-z=11$$
$$3w-4x-y-3z=6$$
$$7w-8x+5y+z=4$$

A. $w=-1$, $x=\frac{1}{2}$, $y=4$ and $z=-5$

B. $w=-41$, $x=59$, $y=-71$ and $z=-95$

C. $w=-2$, $x=1$, $y=8$ and $z=-10$

D. $w=-5$, $x=13$, $y=19$ and $z=-19$

E. $w=-1$, $x=2$, $y=4$ and $z=-5$

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