



Grade 12 Vectors Unit Test

Name _____ Date _____ Score _____ / 8

Part A · Vectors

01 Find the magnitude and direction of $\vec{v} = \langle -5, -8 \rangle \approx$ _____

02 $\vec{v} = \langle 2, 4 \rangle$. Find $6\vec{v} =$ _____

03 Find $|\vec{v}|$ given $\vec{v} = \langle -6, -8 \rangle =$ _____

04 $\vec{v} = \langle 6, 2 \rangle$. Find $-3\vec{v} =$ _____

Part B · Lines & Planes

05

A plane has normal vector $\vec{n} = \langle -3, 0, 2 \rangle$ and passes through P(0, -6, 2). Write its scalar equation =

06 A plane has equation $-8x - 7y - 6z = 2$. State a normal vector to the plane =

07 A plane has equation $-7x + 5y + z = 8$. State a normal vector to the plane =

08 A plane has equation $x + 3y + 2z = 8$. State a normal vector to the plane = _____



Grade 12 Vectors Unit Test (Answer Key)

Part A · Vectors

01 Find the magnitude and direction of $\vec{v} = \langle -5, -8 \rangle \approx r \approx 9.4, \theta \approx 238.0^\circ$

02 $\vec{v} = \langle 2, 4 \rangle$. Find $6\vec{v} = \langle 12, 24 \rangle$

03 Find $|\vec{v}|$ given $\vec{v} = \langle -6, -8 \rangle = 10$

04 $\vec{v} = \langle 6, 2 \rangle$. Find $-3\vec{v} = \langle -18, -6 \rangle$

Part B · Lines & Planes

05

A plane has normal vector $\vec{n} = \langle -3, 0, 2 \rangle$ and passes through P(0, -6, 2). Write its scalar equation =

$$-3x + 2z = 4$$

06 A plane has equation $-8x - 7y - 6z = 2$. State a normal vector to the plane =

$$\langle -8, -7, -6 \rangle$$

07 A plane has equation $-7x + 5y + z = 8$. State a normal vector to the plane =

$$\langle -7, 5, 1 \rangle$$

08 A plane has equation $x + 3y + 2z = 8$. State a normal vector to the plane =

$$\langle 1, 3, 2 \rangle$$