ONTARIO CALCULUS AND VECTORS, GRADE 12, UNIVERSITY PREPARATION (MCV4U) · UNIT D · 25 QUESTIONS

Algebra of Vectors, Lines, and Planes — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **The dot product of (1, 2) and (3, 4) is**

- A 11
- B 13
- C 9
- D 10

Understand It with Pulse | Flag a mistake

2 The dot product of (2, 3) and (4, 1) is

- A 11
- B 13
- C 9
- D 14

Understand It with Pulse | Flag a mistake

3 The dot product of (3, 1) and (2, 5) is

- A 13
- B 11
- C 9
- D 17

Understand It with Pulse | Flag a mistake

4 **The dot product of vectors (2, 3) and (4, 1) is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **The dot product of (3, 4) with itself is**

A 30

B 7

C 9

D 25

Understand It with Pulse | Flag a mistake

6 **The dot product of (4, 3) with itself is**

- A 30
- B 7
- C 16
- D 25

Understand It with Pulse | Flag a mistake

7 **The dot product of (5, 0) with itself is**

- A 30
- B 25
- C 5
- D 36

Understand It with Pulse | Flag a mistake

8 **The dot product of vector (3, 4) with itself is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A line through the origin in direction (1, 2) has parametric equations x equal to t and y equal to**

A 2t

B t

C 2

D $\frac{t}{2}$

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10 **A line through the origin in direction (1, 3) has parametric equations x equal to t and y equal to**

- **A** t
- **B** 3t
- **C** 3
- **D** $\frac{t}{3}$

Understand It with Pulse | Flag a mistake

11 **A line through the origin in direction (1, 4) has parametric equations x equal to t and y equal to**

- **A** t
- **B** 4
- **C** 4t
- **D** $\frac{t}{4}$

Understand It with Pulse | Flag a mistake

12 A line through the origin in direction (2, 1) has parametric equations x = 2t and y = t . The point on the line when t = 3 is

- A (6, 3)
- B (3, 6)
- C (2, 1)
- D (5, 4)

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13 The line x = 1 + 2t, y = 1 - t passes through which point when t equal to 1? The point is

- A (1, 1)
- B (3, 1)
- C (2, 0)
- D (3, 0)

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14 **The line x = 1 + 2t, y = 2 - t passes through which point when t equal to 1? The point is**

- A (3, 1)
- B (1, 2)
- C (3, 2)
- D (2, 1)

Understand It with Pulse | Flag a mistake

15 **The line x = 1 + 2t, y = 3 - t passes through which point when t equal to 1? The point is**

- A (1, 3)
- B (3, 2)
- C (3, 3)
- D (2, 2)

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16 **The line x = 1 + 2t, y = 3 + t passes through which point when t = 2 . The point is**

A (5, 5)

B (1, 3)

C (3, 4)

D (2, 1)

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17 **The plane x + y + z = 2 has normal vector**

A (2, 1, 1)

B (1, 0, 0)

C (0, 1, 1)

D (1, 1, 1)

Understand It with Pulse | Flag a mistake

18 The plane x + y + z = 3 has normal vector

- A (1, 1, 1)
- B (3, 1, 1)
- C (1, 0, 0)
- D (0, 1, 1)

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19 The plane x + y + z = 4 has normal vector

- A (4, 1, 1)
- B (1, 1, 1)
- C (1, 0, 0)
- D (0, 1, 1)

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20 For the plane with equation $2x + 3y - z = 5$, a normal vector is

- A (2, 3, -1)
- B (2, 3, 1)
- C (5, 0, 0)
- D (1, 1, 1)

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21 The distance from the origin to the plane $x = 2$ is

- A 3
- B 0
- C 2
- D 1

Understand It with Pulse | Flag a mistake

22 The distance from the origin to the plane x = 3 is

- A 4
- B 0
- C 1
- D 3

Understand It with Pulse | Flag a mistake

23 The distance from the origin to the plane x = 4 is

- A 4
- B 5
- C 0
- D 1

Understand It with Pulse | Flag a mistake

24 **The plane x = 4 is this far from the origin**

ANSWER _____

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25 **The cross product magnitude of (1, 2, 0) and (0, 1, 0) is**

A 2

B 12

C -10

D 1

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	A	**10.**	B	**19.**	B
2.	A	**11.**	C	**20.**	A
3.	B	**12.**	A	**21.**	C
4.	11	**13.**	D	**22.**	D
5.	D	**14.**	A	**23.**	A
6.	D	**15.**	B	**24.**	4
7.	B	**16.**	A	**25.**	D
8.	25	**17.**	D		
9.	A	**18.**	A		

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