Task card 1 Vectors in 3D: Dot & Cross Product...

u = <-4, -3, 4> and v = <4, 3, -7>. Find u × v.

Task card 2 Vectors in 3D: Dot & Cross Product...

Find k so that <-2, -6, 1> and <6, -1, k> are perpendicular.

Task card 3 Vectors in 3D: Dot & Cross Product...

Find the unit vector in the direction of v = <-6, 3, -2>.

Task card 4 Vectors in 3D: Dot & Cross Product...

Find the area of the parallelogram with sides u = <3, 4, 0> and v = <2, 0, -3>. (The area is the magnitude of u × v.)

Task card 5 Vectors in 3D: Dot & Cross Product...

u = <4, -3, 2> and v = <4, -1, -1>. Find u × v.

Task card 6 Vectors in 3D: Dot & Cross Product...

Are u = <-4, -4, 2> and v = <4, -6, 1> perpendicular? Write yes or no.

Task card 7 Vectors in 3D: Dot & Cross Product...

Find the distance between the points P(-2, -4, -2) and Q(-6, -12, 6).

Task card 8 Vectors in 3D: Dot & Cross Product...

Find the area of the parallelogram with sides u = <-1, -4, 3> and v = <-1, 4, 1>. (The area is the magnitude of u × v.)

Task card 9 Vectors in 3D: Dot & Cross Product...

u = <-6, 5, 4> and v = <5, 5, 5>. Find u × v.

Task card 10 Vectors in 3D: Dot & Cross Product...

Find k so that <-1, -5, -5> and <-5, -3, k> are perpendicular.

Task card 11 Vectors in 3D: Dot & Cross Product...

Find the unit vector in the direction of v = <0, 3, -4>.

Task card 12 Vectors in 3D: Dot & Cross Product...

Find the area of the parallelogram with sides u = <2, 3, 4> and v = <0, -1, 4>. (The area is the magnitude of u × v.)

Task card 13 Vectors in 3D: Dot & Cross Product...

$u = \langle -7, 5, -7 \rangle$ and $v = \langle 5, 7, 0 \rangle$. Find $u \times v$.

Task card 14 Vectors in 3D: Dot & Cross Product...

Are $u = \langle 0, -2, -2 \rangle$ and $v = \langle -5, 0, -1 \rangle$ perpendicular? Write yes or no.

Task card 15 Vectors in 3D: Dot & Cross Product...

Find the distance between the points P(-4, 1, -3) and Q(-10, -1, 0).

Task card 16 Vectors in 3D: Dot & Cross Product...

Find the area of the parallelogram with sides $u = \langle 1, -4, 3 \rangle$ and $v = \langle -3, 4, 0 \rangle$. (The area is the magnitude of $u \times v$.)

Task card 17 Vectors in 3D: Dot & Cross Product...

$u = \langle 3, -3, 2 \rangle$ and $v = \langle -3, 5, 0 \rangle$. Find $u \times v$.

Task card 18 Vectors in 3D: Dot & Cross Product...

Find k so that $\langle 1, -6, 2 \rangle$ and $\langle 2, 1, k \rangle$ are perpendicular.

Task card 19 Vectors in 3D: Dot & Cross Product...

Find the unit vector in the direction of v = <2, -10, 11>.

Task card 20 Vectors in 3D: Dot & Cross Product...

Find the area of the parallelogram with sides u = <-4, 3, 0> and v = <-1, 4, 0>. (The area is the magnitude of u × v.)

Task card 21 Vectors in 3D: Dot & Cross Product...

u = <2, -1, -2> and v = <4, -4, -2>. Find u × v.

Task card 22 Vectors in 3D: Dot & Cross Product...

Are u = <3, -6, 3> and v = <0, -1, -2> perpendicular? Write yes or no.

Task card 23 Vectors in 3D: Dot & Cross Product...

Find the distance between the points P(2, -2, 4) and Q(-2, -6, 11).

Task card 24 Vectors in 3D: Dot & Cross Product...

Find the area of the parallelogram with sides u = <3, 4, 1> and v = <-3, 0, 1>. (The area is the magnitude of u × v.)

Vectors in 3D: Dot & Cross Products Task Cards

Recording sheet · Grade 12 · Give exact answers. Write vectors as <a, b, c>.

Scan to check your answers

Name: _____ Date: _____

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

Vectors in 3D: Dot & Cross Products Task Cards: Answer Key

Grade 12 · Hard

The answers online

1. <9, -12, 0>	**2.** k = 6	**3.** $\left\langle -\frac{6}{7}, \frac{3}{7}, -\frac{2}{7} \right\rangle$
4. 17	**5.** <5, 12, 8>	**6.** no
7. 12	**8.** 18	**9.** <5, 50, -55>
10. k = 4	**11.** $\left\langle 0, \frac{3}{5}, -\frac{4}{5} \right\rangle$	**12.** 18
13. <49, -35, -74>	**14.** no	**15.** 7
16. 17	**17.** <-10, -6, 6>	**18.** k = 2
19. $\left\langle \frac{2}{15}, -\frac{2}{3}, \frac{11}{15} \right\rangle$	**20.** 13	**21.** <-6, -4, -4>
22. yes	**23.** 9	**24.** 14