Coordinates in three dimensions

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A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the explanation and worked example. Show your working; use a calculator only where asked.

What you will practise

• Use ordered triples to describe locations in three-dimensional space.

• Explain a method and check the reasonableness of a result.

Useful starting skills: Use the prerequisite operations and representations shown in the worked example.

An ordered triple (x, y, z) gives movement along three perpendicular axes. Fix the origin and axis directions before interpreting the numbers.

A point with z=0 lies in the xy-plane. Holding two coordinates fixed while varying the third moves parallel to one axis. Use 3D software to view from several directions.

Worked example

Move from (2, -1,4) by 3 in x,2 in y and -5 in z.

Add changes coordinate by coordinate.

(2+3, -1+2,4-5).

Answer: (5,1, -1)

Try it yourself

Name: _____ Date: _____

1. What is the z-coordinate of (4, -3,7)?

2. Which coordinate is zero in the xy-plane?

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. 7

It is the third coordinate.

2. z

That plane has no displacement along z.

Curriculum reference: VC2M8SP03

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