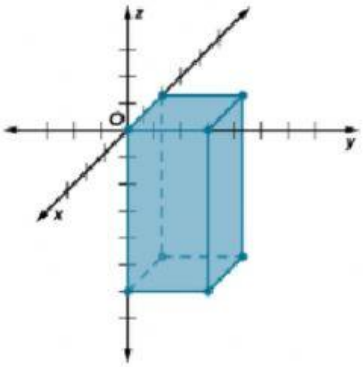


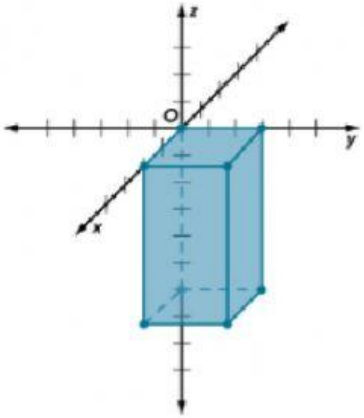
Coordinates in Space

Which rectangular solid contains $(2, 3, -6)$ and the origin as vertices?

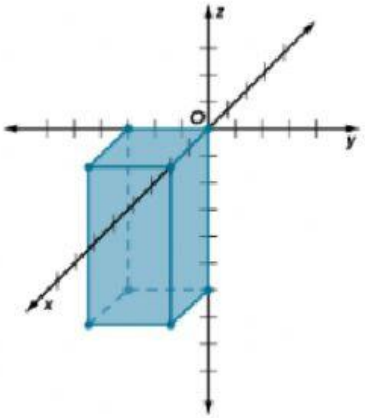
○ A



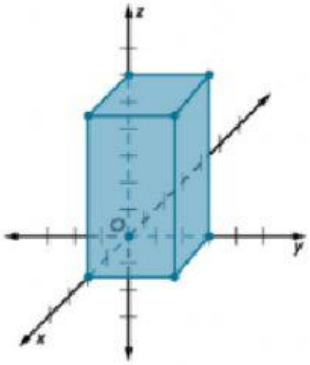
○ B



○ C



○ D



ANIMATION **Animators use three-dimensional coordinate space to create complex 3D images and animations. By combining several simple 3D shapes, animators can create the outlines of larger objects. If two objects are located at $(-3, -5, 7)$ and $(2, 4, 0)$, what is the distance between the two objects? Round your answer to the nearest tenth, if necessary.**

○ **A** 7.1 units

○ **B** 10.3 units

○ **C** 11.4 units

○ **D** 12.4 units

عزيزي الطالب : أولاً اجتهد في فهم ومذاكرة تمارين الكتاب(الكتاب أولاً). تمنياتي للجميع بالنجاح والتفوق

LIVEWORKSHEETS

Math Mr. Abdulkader Amro



Determine the coordinates of the midpoint M of $\overline{DE}$ with endpoints $D\,(-4,-3,5)$ and $E\,(6,1,-9)$.

$M = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}, \frac{z_1+z_2}{2}\right)$ Midpoint Formula in Space

$= \left(\frac{-4+6}{2}, \frac{-3+1}{2}, \frac{5+(-9)}{2}\right)$ Substitution

$= \left(\square, \square, \square\right)$ Simplify.

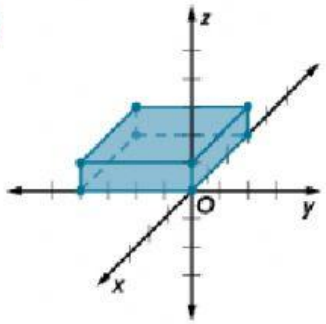
Determine the coordinates of the midpoint M of $\overline{JK}$ with endpoints $J\,(2,4,9)$ and $K\,(-4,-5,11)$.

$M\left(\square, \square, \square\right)$

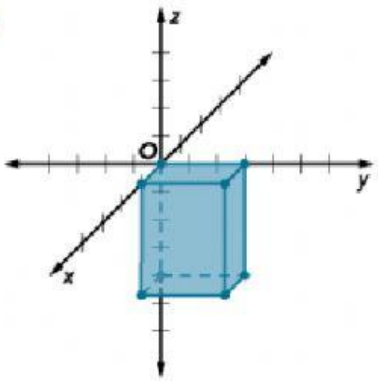
- n/m

Which rectangular solid contains $(3,-4,1)$ and the origin as vertices?

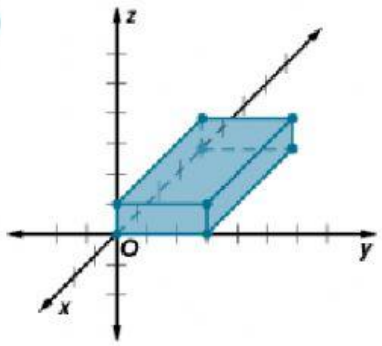
○ A)



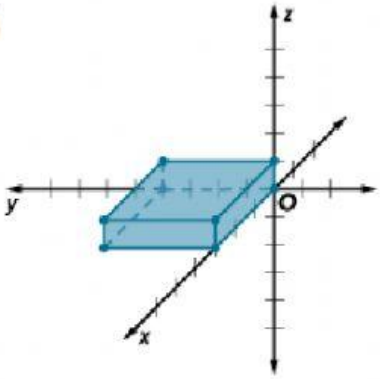
○ B)



○ C)



○ D)



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LIVEWORKSHEETS



AVIATION Air traffic controllers use three-dimensional coordinate space to track the locations of aircraft. By assigning coordinates to every aircraft in the sky, air traffic controllers can describe the positions of other aircraft to pilots to prevent accidents. An airplane is at $(17, -14, 23)$, and the air traffic control tower is at $(0, 0, 0)$. If each unit on the coordinate system represents a kilometer, what is the distance between the airplane and the tower? Round your answer to the nearest tenth, if necessary.

[ ] km

Determine the coordinates of the midpoint M of $\overline{AB}$ with endpoints $A(-7, 9, 4)$ and $B(5, -3, -4)$.

$M($ [ ] , [ ] , [ ] $)$

MEDICINE Doctors use three-dimensional coordinate systems for medical imaging. Medical imaging and positioning systems allow doctors to analyze a person's anatomy from a three-dimensional perspective. On an anatomical coordinate system the top of a man's spine is located at $(5, 0, 65)$, and the bottom of his spine is located at $(3, 0, -6)$. If each unit on the coordinate system represents a centimeter, what is the length of the man's spine?

$$D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$ Distance Formula in Space

$$= \sqrt{(5-3)^2 + (\square - \square)^2 + (\square - \square)^2}$$ Substitution

$$= \sqrt{2^2 + 0^2 + 71^2}$$ Subtract.

$= \sqrt{5045}$ or about 71.0 Use a calculator.

So, the length of the man's spine is about 71.0 centimeters.

عزيزي الطالب : أولاً اجتهد في فهم ومذاكرة تمارين الكتاب(الكتاب أولاً) . تمنياتي للجميع بالنجاح والتفوق

LIVEWORKSHEETS