
Is it possible for x and v to be related to an angle θ according to $\tan \theta = x/v$?

yes

no

Account for your answer.

3. CJ6 1.CQ.003. [310951] You can always add two numbers that have the same units. However, you cannot always add two numbers that have the same dimensions. Explain why not, and include an example in your explanation.

4. CJ6 1.CQ.004. [310970] (a) Is it possible for two quantities to have the same dimensions, but different units?

yes

no

Support your answer with an example and an explanation.

(b) Is it possible for two quantities to have the same units but different dimensions?

yes

no

Support your answer with an example and an explanation.

5. CJ6 1.CQ.005. [310902] In the equation $y = c^n at^2$ you wish to determine the integer value (1, 2, etc.) of the exponent n . The dimensions of y , a , and t are known. It is also known that c has no dimensions. Can dimensional analysis be used to determine n ?

yes

no

not enough information to decide

Account for your answer.

6. CJ6 1.CQ.008. [310900] Which of the following quantities (if any) can be considered a vector? (Select all that apply.)

- the number of people attending a football game
- the number of days in a month
- the number of pages in a book
- none of the above

Explain your reasoning.

7. CJ6 1.CQ.009. [310909] Which of the following displacement vectors (if any) are equal?

	Vector Magnitude	Direction
A	100 m	30° north of east
B	100 m	30° south of west
C	50 m	30° south of west
D	100 m	60° east of north

- B and C**
- A, B, and D**
- None are equal
- A and D**

Explain your reasoning.