

**Mathematics Questions by Topics**

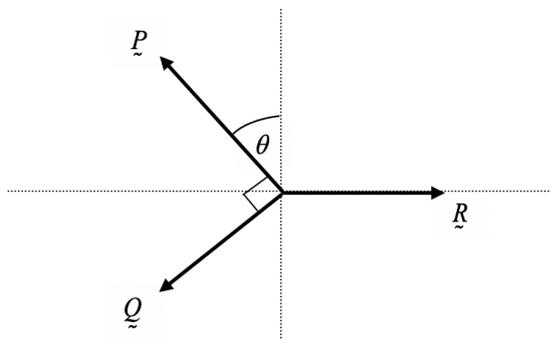
Motion and Force

Question 47

Source: K7SM2Q18

**Question 47**

The following diagram shows a particle in equilibrium under the action of three concurrent coplanar forces  $\vec{P}$ ,  $\vec{Q}$  and  $\vec{R}$ . The forces  $\vec{P}$ ,  $\vec{Q}$  and  $\vec{R}$  have magnitudes of  $P$ ,  $Q$  and  $R$  respectively. Which one of the following statements is **not** correct?



- A.**  $P \operatorname{cosec}(\theta) = Q \sec(\theta)$
- B.**  $R^2 = P^2 + Q^2$
- C.**  $R = P \sin(\theta) + Q \cos(\theta)$
- D.**  $\cot(\theta) = \frac{P}{Q}$
- E.**  $\vec{P} + \vec{Q} + \vec{R} = \vec{0}$