Answer on Question #61978-Physics-Optics

10 Which of the following is not true about diverging lens

the principal focus is positive

the principal focus is negative

they produce virtual images only

they form virtual, erect and smaller images of real object

Solution

The principal focus is negative for diverging lens.

Answer: the principal focus is positive.

11 In an experiment to determine the focal length of a convex lens, $\frac{1}{u}$ (cmÀ1) was plotted on horizontal and $\frac{1}{v}$ (cmÀ1) on the vertical axis, where $u\ and\ v$ have their usual meaning. What is the physical significance of the reciprocal of the intercept on the horizontal axis?

linear magnification

focal length

object distance

image distance

Solution

The reciprocal of the intercept on the horizontal axis is f - focal length.

Answer: focal length.

12 In an experiment to determine the focal length of a convex lens, $\frac{1}{u}$ (cmÀ1) was plotted on horizontal and $\frac{1}{v}$ (cmÀ1) on the vertical axis, where $u\ and\ v$ have their usual meaning. What is the physical significance of the reciprocal of the slope of the graph?

linear magnification

focal length

object distance

image distance

Solution

The reciprocal of the slope of the graph is m - linear magnification.

Answer: linear magnification.