Question

Which of the following could not be points on the unit circle?

$\left(-\dfrac{2}{3}, \dfrac{\sqrt{5}}{3}\right)$

$(0.8, -0.6)$

$(1, 1)$

$\left(\dfrac{\sqrt{3}}{2}, \dfrac{1}{3}\right)$

Solution

Pairs $(1,1)$ and $(\dfrac{\sqrt{3}}{2},\dfrac{1}{3})$ could not be points on the unit circle, because the distance between a point and the center is not equal to 1, that is,

$$\sqrt{1+1} = \sqrt{2} \neq 1,$$

$$\sqrt{\dfrac{3}{4}+\dfrac{1}{9}} = \sqrt{\dfrac{31}{36}} \neq 1.$$

Answer: $(1,1)$, $(\dfrac{\sqrt{3}}{2},\dfrac{1}{3})$.

Question

If $P(x,y)$ is the point on the unit circle determined by real number θ, then $\tan\theta = $ ___ .

$\dfrac{1}{x}$

$\dfrac{1}{y}$

$\dfrac{y}{x}$

$\dfrac{x}{y}$

Answer: $\tan\theta = \dfrac{y}{x}$.