Assignment 0

Date on 2020-01-04, 22:58 UTC

1. Find the value of \( \int_0^1 x^2 \, dx \)?

2. If \( f(x) = 2x + 3 \), find \( f(4) \).

3. What is the area of a rectangle with length 5 units and width 3 units?

4. Which of the following is a scalar quantity?
   - force
   - momentum
   - distance

5. Is \( \sqrt{2} \) a rational number?

6. What is the magnitude of \( \mathbf{v} = \langle 3, 4 \rangle \)?

7. If \( \theta = \pi/6 \), what is \( \sin(\theta) \)?

8. What is the slope of the line \( y = 4x + 2 \)?

9. A box contains 5 red balls, 4 yellow balls and 8 green balls. What is the probability of selecting a yellow ball?

10. What is the derivative of \( y = e^x \)?

11. Which one of the following functions has value zero at \( x = 3 \)?
   - \( f(x) = x^2 - 9 \)
   - \( f(x) = e^x \)
   - \( f(x) = \sin(x) \)
   - \( f(x) = \cos(x) \)

12. How do you find the area of a circle?