

Name _____ Score _____/10

Please Print Clearly

Show your work neatly and well organized.

1. (2 points) Fill in the blanks

Definition: A **function** consists of three things

- A set called the **domain**
- A set called the **range**
- A **rule** which associates **each** element of the domain with a **unique** element of the range.

2. The graph of the function whose rule is $f(x) = 3x - 8$ is a **line**.

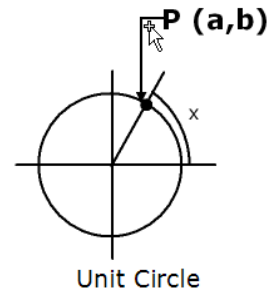
3. If f is a function and $f(3) = 2$, then the point $(3,2)$ is on the graph of f . **Yes**

4. Consider the function whose rule is $f(x) = x^2 + x + 2$. What is the second coordinate of the point which is on the graph of f and whose first coordinate is 3? **14**

5. A linear function is a function whose rule may be written in the form $f(x) = mx + b$ where m and b are real numbers.

6. The graph of a polynomial function is a smooth, continuous curve with no **sharp corners**.

7. Refer to the diagram at the right. Express each of the following in terms of a and b . $\sin(x) = \mathbf{b}$ $\cos(x) = \mathbf{a}$



8. Refer to Figure 1. What is the relation between $\sin(\alpha)$ and $\cos(\beta)$ **$\sin(\alpha) = \cos(\beta)$ because α and β are complementary angles and sine and cosine are co-functions. You could also reason that they are both equal to a/c and therefore are equal.**

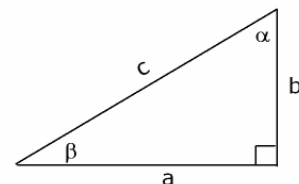


Figure 1

9. What are the x -intercepts of the polynomial function whose rule is $f(x) = (x-3)(x+1)(x-5)$? **The zeros of f are clearly (by virtue of the Zero Factor Property) 3, -1, and 5. Because they are real numbers they correspond to the x -intercepts**

$(3, 0)$, $(-1, 0)$, and $(5, 0)$