Quiz #0 (Diagnostic Quiz), 8/23
Howard Math 156 (Calculus I), Fall 2022

1. Simplify the following expressions:

   (a) $(-3)^4$ (b) 3^{-4} (c) $\dfrac{5^{23}}{5^{21}}$ (d) $\sqrt{200}-\sqrt{32}$ (e) $(3a^3b^3)(4ab^2)^2$

2. Solve the following equations:

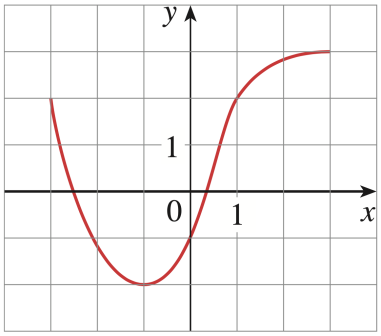
   (a) $\dfrac{2x}{x+1}=\dfrac{2x-1}{x}$ (b) $x^2-x-12=0$

3. Decide whether each of these identities is true or false:

   (a) $(p+q)^2=p^2+q^2$ (b) $\sqrt{ab}=\sqrt{a}\sqrt{b}$

4. Find the equation of a line that passes through point $(2,-5)$ and is parallel to line $2x-4y=3$.

5. Consider the function f graphed below:



   (a) State the value of $f(-1)$.
   (b) Estimate the values of x for which $f(x)=0$.
   (c) What are the domain and the range of f?

6. Convert from degrees to radians (for (a) and (b)) or radians to degrees (for (c)):

   (a) 300° (b) -18° (c) $\dfrac{5\pi}{6}$

7. Find the exact value of these evaluations of trigonometric functions (assume input is radians):

   (a) $\tan(\pi/3)$ (b) $\sin(7\pi/6)$