

Quiz #0 (Diagnostic Quiz), 8/22
Math 156 (Calculus I), Fall 2023

This quiz is designed to check your background in high school algebra. It will not be graded.

1. Simplify the following expressions:

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

2. Solve the following equations:

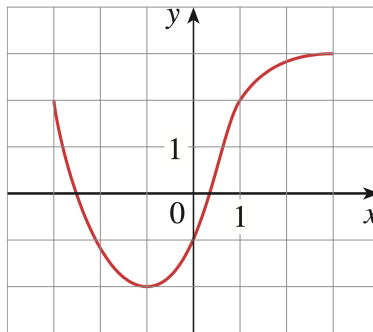
(a) $\frac{2x}{x+1} = \frac{2x-1}{x}$ (b) $x^2 - x - 12 = 0$

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) $\frac{5\pi}{6}$

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

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