

Math 1513 - College Algebra

Quiz #10 - 2018.09.17

Solutions

1. Write an equation of the line perpendicular to the line $y = \frac{4}{5}x - 3$ which passes through the point $(2, -3)$.

The slope of the perpendicular line will be $-\frac{5}{4}$, and we can use the point-slope form of the line to arrive at the equation:

$$y + 3 = -\frac{5}{4}(x - 2),$$

which we can write in slope-intercept form as

$$y = -\frac{5}{4}x - \frac{1}{2}$$

2. State the domain of the function $f(x) = \sqrt{1 - 2x}$, (express your answer in interval notation).

Here we require that the argument of the square root be non-negative, i.e. $1 - 2x \geq 0$, or $1 \geq 2x$ or $x \leq \frac{1}{2}$. Thus, in interval notation, the domain is $(-\infty, \frac{1}{2}]$.