

KEY

**Instructions:** Show all work. If you are using your calculator to solve, you may sketch a graph or indicate keys pressed to show work. Exact values: do not use decimals in your answers unless the problem begins with decimals, or is a word problem, or unless specifically asked to round. All answers should be fully reduced for full credit. Draw diagrams to help organize the data (this is worth partial credit). If you do your work on scrap paper, you should indicate that directly on the test paper along with your final answer. It is preferable, if you can, to do work directly on the quiz.

1. Solve the equation  $10x - 5y = 25$  for  $y$ .

$$\frac{-5y}{-5} = \frac{-10x + 25}{-5}$$

$$y = 2x - 5$$

2. Solve the equation  $\frac{1}{3}x = 2 + \frac{5}{6}x$ .

$$6\left[\frac{1}{3}x\right] = 6\left[2 + \frac{5}{6}x\right]$$

$$\frac{6}{3}x = 12 + \frac{30}{6}x$$

$$2x = 12 + 5x$$

$$-3x = 12$$

$$x = -4$$

3. Evaluate the expression  $\frac{a^2 - 4}{a^2 + 5a - 14}$  for  $a = (-3)$ .

$$(-3)^2 - 4 = 9 - 4 = 5$$

$$(-3)^2 + 5(-3) - 14 = 9 - 15 - 14 = 9 - 29 = -20$$

$$\Rightarrow \frac{5}{-20} = \boxed{-\frac{1}{4}}$$

4. What is the smallest set of numbers (from among the natural numbers, the whole numbers, the integers, the rational numbers, the irrational numbers or the real numbers) does the set

$$\left\{ |-14|, -1, \frac{16}{8}, 2^3, 2500, \frac{0}{-5} \right\}$$
 belong to?

$$= \left\{ 14, -1, 2, 8, 2500, 0 \right\} \text{ integers.}$$