

Quiz #1

1. The set of all terminating or repeating decimals is called

Rationals \mathbb{Q}

2. The set of all positive and negative whole numbers is called

Integers \mathbb{Z}

3. The set of all non-terminating, non-repeating decimals is called

Irrationals

4. The set containing no elements is called

empty/null set \emptyset

5. The set of counting numbers is called

Natural #'s \mathbb{N}

(1 point each) Given the following sets, determine the unions and intersections:

$$A = \{1, 2, 3, 4, 5\}, \quad B = \{1, 3, 5\}, \quad C = \{2, 4, 6\}$$

6. $A \cap B = B$

7. $A \cup C = \{1, 2, 3, 4, 5, 6\}$ $A \cup \{6\}$

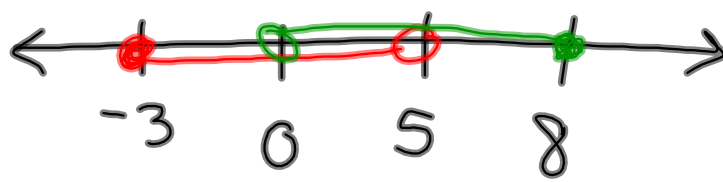
8. $B \cap C = \emptyset$

9. $A \cup B = A$

10. $A \cap C = \{2, 4\}$

11. State the intersection in interval notation:

$$\{x | -3 \leq x < 5\} \cap \{x | 0 < x \leq 8\}$$

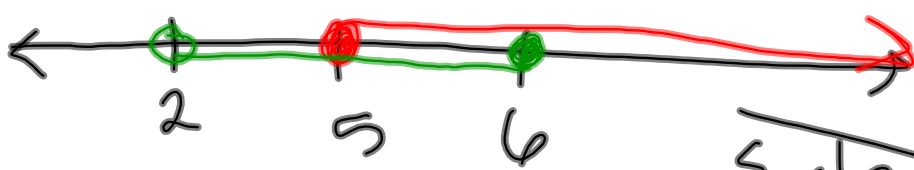


$$(0, 5)$$

- $\{p/q\}$
- (a, b)
- $[a, b]$
- $(a, b]$
- $[a, b)$

12. State the union in set-builder notation:

$$[5, \infty) \cup (2, 6]$$



$$\{x | x > 2\}$$

~~$$\{x | 2 < x < \infty\}$$~~

1.4

10. (eleven more than the square of a number) added to (the difference between the number and 17)

$$x^2 + (x + 17) + 11$$

$$(11 + x^2) + (x - 17)$$

$$x^2 + x - 6$$

9

?

$$16. \text{ larger \#} = x$$

$$\text{smaller \#} = 33 - x$$

$$(6 + 2(33 - x)) - (3 + x)$$

$$6 + 66 - 2x - 3 - x$$

$$\boxed{69 - 3x}$$

$$x - (3 + x)$$

$$x + (-1)(3 + x)$$

$$x + (-3) + (-x)$$

2.1 Equations in One Variable

identity true for any instance of the variable

$$x+2=x+2$$

$$2=2$$

$$0=0$$

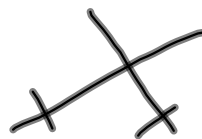
conditional equation true for only certain instances of the variable

$$x+1=3 \quad x=2; \quad x^2=4 \quad x=\pm 2$$

contradiction. never true for any instance of the variable

$$x+2=x+3$$

$$2=3$$



(solution is the empty set)

2.1

$$56. \quad 4[3 + 5(3-x) + 2x] = 6 - 2x$$

$$4[3 + 15 - 5x + 2x] = 6 - 2x$$

$$4[18 - 3x] = 6 - 2x$$

$$72 - 12x = 6 - 2x$$

$$72 - 6 = -2x + 12x$$

$$66 = 10x$$

$$\frac{66}{10} = \frac{\cancel{10}x}{\cancel{10}}$$

$$\boxed{\frac{33}{5} = x}$$

67.

$$8 \cdot \left(\frac{1}{2}x - \frac{3}{4}x + \frac{5}{8} \right) = \left(\frac{3}{2}x - \frac{5}{2} \right) \cdot 8$$

$$\overset{8}{\cancel{8}} \cdot \frac{1}{\cancel{2}}x - \overset{2}{\cancel{8}} \cdot \frac{3}{\cancel{4}}x + \overset{8}{\cancel{8}} \cdot \frac{5}{\cancel{8}} = \overset{8}{\cancel{8}} \cdot \frac{3}{\cancel{2}}x - \overset{8}{\cancel{8}} \cdot \frac{5}{\cancel{2}}$$

$$4x - 6x + 5 = 12x - 20$$

$$-2x + 5 = 12x - 20$$

$$5 + 20 = 12x + 2x$$

$$25 = 14x$$

$$\boxed{\frac{25}{14} = x}$$

70.

$$\frac{36}{1} \left(\frac{x-2}{4} - \frac{x+5}{6} \right) = \left(\frac{5x-2}{9} \right) \cdot \frac{36}{1}$$

$$\frac{\cancel{36}^9}{1} \cdot \frac{(x-2)}{\cancel{4}} - \frac{\cancel{36}^6}{1} \cdot \frac{(x+5)}{\cancel{6}} = \frac{(5x-2)}{\cancel{9}} \cdot \frac{\cancel{36}^4}{1}$$

$$9(x-2) - 6(x+5) = (5x-2)4$$

$$9x - 18 - 6x - 30 = 20x - 8$$

$$3x - 48 = 20x - 8$$

$$-48 + 8 = 20x - 3x$$

$$-40 = 17x$$

$$\frac{-40}{17} = x$$

$$92. \frac{6}{\left(\frac{7}{a}\right)} = -18$$

$$\frac{6}{1} \cdot \frac{a}{7} = -18$$

$$\cancel{6} \cdot \left(\frac{\cancel{6}a}{\cancel{7}} \right) = \left(\frac{3}{\cancel{1}} \right) \cdot \frac{\cancel{7}}{\cancel{6}}$$

$$a = -21$$

96

HW 2
46-77, 90-99

30 min
Khan Academy