

January 20, 2016

#3)  $6x + 2 = 10$

$$\frac{6x}{6} = \frac{8}{6}$$

$$x = \frac{4}{3}$$

Jan 20-9:03 AM

Numeric Sets

$N = \{1, 2, 3, \dots\}$

$W = \{0, 1, 2, 3, \dots\}$

$Z = \{\dots, -2, -1, 0, 1, 2, \dots\}$

$Q = \{\frac{a}{b} \mid a \in Z \text{ and } b \in Z \text{ and } b \neq 0\}$

$I = \{x \mid x \text{ is not a rational number}\}$

$R = \{x \mid x \text{ is a real number}\}$

Jan 20-9:12 AM

Prime Numbers

$P = \{2, 3, 5, 7, 11, 13, 17, 19, \dots\}$

$7 = 7 \cdot 1 \rightarrow 7 = 7$   
factors of 7

Composite Number: any number not prime

$14 = 2 \cdot 7 \cdot 1$   
factors of 14

Jan 20-9:18 AM

Factor Tree

$3 \cdot 5 \cdot 2 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 11$

$= 2^5 \cdot 11$

Product of Primes

Factor Tree diagram showing 176 factored into 2, 2, 2, 2, 2, 11.

Jan 20-9:23 AM

#29

	N	W	Z	Q	R
$-\frac{4}{3}$				✓	✓
12	✓	✓	✓	✓	✓
0		✓	✓	✓	✓
$\sqrt{11}$					✓
$1.\bar{3}$				✓	✓
$\frac{6}{2}$	✓	✓	✓	✓	✓

Jan 20-9:30 AM

#9)  $0.\overline{648} \rightarrow$  Fraction

$$\frac{648}{1000} = \frac{324}{500} = \frac{162}{250} = \frac{81}{125}$$

0. $\overline{12}$   $\rightarrow$  0.12121212...

Steps

Let  $x = 0.121212\dots$

①  $100 \cdot x = 100 \cdot 0.121212\dots$   
 $100x = 12.121212\dots$

②  $100x = 12.121212\dots$   
 $-x = 0.121212\dots$

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$99x = \frac{12}{99}$

$x = \frac{12}{99}$

$x = \frac{4}{33}$

Jan 20-9:42 AM