Sect 2.1 - 2.3 Unit Test

Name: _____ **Section:**_____

Solve the following equation:

1) $x + 9.82 = -4.61$

2) $\frac{y}{7} = 8$

3) $-5.2g = 2.4$

4) $-\frac{9}{23} + w = \frac{19}{69}$

5) $x - \frac{3}{7} = -\frac{3}{4} - 3x$

6) $7x - 1.6 = 6.5x + 1.8$

7) $-\frac{7}{8}x = \frac{2}{3}$

8) $-3(2x - 5) + 6 = 45$

9) $0.5x + 1.2 - 0.4 + 0.9x = 0.8 + 1.4x$

10) $0.3x - 1.2 + 4(0.2x - 5) = -18 + 1.1x$

11) $6(x + 4) - (4x + 3) = 5$

12) $\frac{5(x+3)}{6} - \frac{2(x+1)}{9} = 2$

13) $0.9(4x - 1.5) = -2.5(5x - 0.748)$

14) $\frac{4}{21}x - \frac{5}{6} = \frac{3}{14}x + \frac{1}{3}$

Identify the Property of real numbers being used:

15a) $\frac{4}{21}y(63) - 15 = \frac{4}{21}(63)y - 15$

15b) $8y - \frac{5}{6}\left(\frac{6}{5}\right) = 8y - 1$

15c) $7x - 9.2z + 0 = 7x - 9.2t$

15d) $3x + (8x + 7) = (3x + 8x) + 7$

Translate the following into an equation and solve:

16) Fifteen is equal to a number split into five equal parts.

17) The opposite of twice a number is a negative five-elevenths.

18) A number decreased by five and thirty-two hundredths amounts to negative six and three tenths.

In the problem below, the student has made an error. Use critical thinking to find and correct the error. Then finish working the problem.

19) Solve: $7x - 3(2x - 4) = 7$

Solution:

$7x - 3(2x - 4) = 7$

$7x - 6x - 12 = 7$

$x - 12 = 7$

$x = 19$

If a, b, c, and d are real numbers and If there is no solution to the equation ax + b = cx + d, use critical thinking to determine which of the statements has to be true:

20) i) a, b, c, and d have to be whole numbers.
ii) a = b = c = d.
iii) a = c and b = d.
iv) a, b, c, and d have to be irrational numbers.
v) a = c and b ≠ d.

Answers:

1) x = – 14.43 2) y = 56 3) $g = -\frac{6}{13}$ 4) $w = \frac{2}{3}$

5) $x = -\frac{9}{112}$ 6) x = 6.8 7) $x = -\frac{16}{21}$ 8) x = – 4

9) All real numbers 10) No solution 11) x = – 8 12) $x = -\frac{5}{11}$

13) x = 0.2 14) x = – 49 15a) Commutative Property of Multiplication
15b) Inverse Property of Multiplication 15c) Identity Property of Addition
15d) Associative Property of Addition 16) $15 = \frac{n}{5}$; n = 75

17) $-2n = -\frac{5}{11}$; $n = \frac{5}{22}$ 18) n – 5.32 = – 6.3; n = – 0.98

19) x = – 5 20) v