Chapter 1 Unit Test

Name: _____ **Section:** _____

1) Find – 11 subtract 15, plus – 5.

2) Simplify: $3.2^1 - 1.8[1.5 - 4.8(0.3 + 0.2)] + \sqrt{6^2 - 5^2 - 2(5)}$

3) Simplify: $\frac{15}{-5-(-5)}$

4) Simplify: $\left(-3\frac{4}{15}\right) \div \left(4\frac{2}{3}\right) - \left(-\frac{11}{15}\right)$

5) Simplify: $-6^2 - 12 \div (-4) + 3(0)(-4) - 2^2$

6) Find the product of $-5\frac{5}{6}$ and the sum of $3\frac{5}{8}$ and – 7.

7) Simplify: $-12\left|\frac{1}{3} - \frac{7}{8}\right|^2 \div \frac{39}{36} - (-2)^2 - 0 \div (-7)$

Compare using >, <, or =:

8a) – 6 _____ 4

8b) $-\frac{5}{6}$ _____ – 0.83

8c) – (– 6.4) _____ $-\left|-\frac{32}{5}\right|$

8d) $\left|\frac{11}{4}\right|$ _____ – (– 2.75)

9) Evaluate: $-x - 4xy^2z + \sqrt{xyz}$ if x = – 6, y = – 3, and z = 2.

10) Evaluate: $-\frac{a^2b}{c} - \frac{5}{d}$ if a = – 2, b = – 5, c = – 14 and d = – 21.

Translate, but do not simplify:

11) Twice the total of a number and – 4, decreased by 17.5.

12) The quotient of five times a number and the difference of – 3 and the number.

13) Simplify: – (3.2x – 4y + 6) – 2(4.1x – 7)

14) Simplify: $\frac{2}{3}(6x - 5) + \frac{3}{4}(4x - 1)$.

15) The low temperatures in Chicago during a five-day period were – 8˚, 4˚, – 13˚, 1˚ and 6˚. What was the average low temperature?

16) Graph the numbers – 5, $4\frac{1}{3}$, – 1.8, and 3 on a number line.

17) During a twelve-week period, Sigma's commission on selling Avon products increased by $0.30 per order. But, due to increasing gas prices, her expenses also increased by $7.50 per week. If she filled 282 orders, find her net increase or decrease in income.

18) For what values a and b is the expression "a ÷ b = b ÷ a" true.
   a) a and b have to be real numbers.
   b) a and b have to be integers.
   c) a ÷ b = b ÷ a is never true.
   d) a and b are equal or additive inverses.
   e) a and b have to be irrational numbers.

19) Given that d is an integer, which of the statement(s) below is (are) always true:
   a) d is also a rational number.
   b) d is also a whole number.
   c) d is also a natural number.
   d) d is also an irrational number.
   e) d is also a real number.

20) Find and correct the error in the solution below:
   Solution:

$4 \bullet 3^3 - (9 \bullet 5 - 25)$
$= 4 \bullet 3^3 - (45 - 25)$
$= 4 \bullet 3^3 - 20$
$= 4 \bullet 9 - 20$
$= 36 - 20$
$= 16$

Answers:

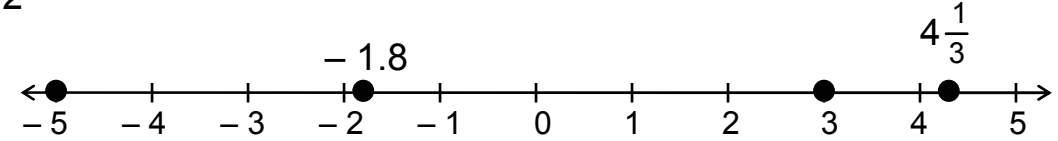
1) -31 2) 5.82 3) undefined 4) $\frac{1}{30}$ 5) -37 6) $19\frac{11}{16}$ 7) $-7\frac{1}{4}$

8a) < 8b) < 8c) > 8d) = 9) 444 10) $-1\frac{4}{21}$

11) $2(n + [-4]) - 17.5$ 12) $\frac{5n}{-3-n}$ 13) $-11.4x + 4y + 8$ 14) $7x - \frac{49}{12}$

15) -2°

16)



17) – $5.40 18) d 19) a, e 20) 88