

algebra
Big Quiz #1.2

Name: Key

In Problems 1 – 10:

[3 Points Each]

Write the number rounded as indicated and **CIRCLE EACH CATEGORY** to which the number belongs.

1.) $5\frac{3}{5}$ Decimal: 5.6 RATIONAL IRRATIONAL
Tenths

2.) $-\frac{214}{6}$ Decimal: -35.667 RATIONAL IRRATIONAL
Thousandths

3.) $\frac{10}{7}$ Decimal: 1.43 RATIONAL IRRATIONAL
Hundredths

4.) $\sqrt{266}$ Decimal: 16.310 RATIONAL IRRATIONAL
Thousandths

5.) 5π Decimal: 15.7 RATIONAL IRRATIONAL
Tenths

6.) $\sqrt{1444}$ Decimal: 38 RATIONAL IRRATIONAL
Hundredths

7.) $-2\frac{4}{9}$ Decimal: -2.44 RATIONAL IRRATIONAL
Hundredths

8.) -8.7^2 Decimal: -75.7 RATIONAL IRRATIONAL
Tenths

9.) $\frac{\sqrt{765}}{3}$ Decimal: 9.2 RATIONAL IRRATIONAL
Tenths

10.) $(-3)^2$ Decimal: 9 RATIONAL IRRATIONAL
Hundredths

11.) Write each number as a decimal and place each point on the number line below.

[12 Points]

A: $-\frac{\pi}{4} = -0.79$

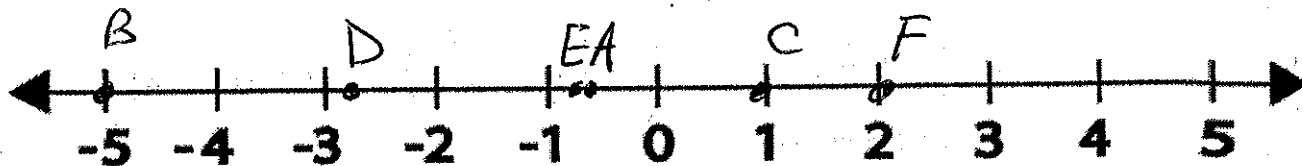
D: $-2\frac{5}{7} = -2.71$

B: $-\sqrt{25} = -5$

E: $-\frac{4}{5} = -0.8$

C: $(-1)^2 = 1$

F: $|-2| = 2$



12.) Write each number as a decimal and place each point on the number line below.

[12 Points]

A: $\pi - 4 = -0.85$

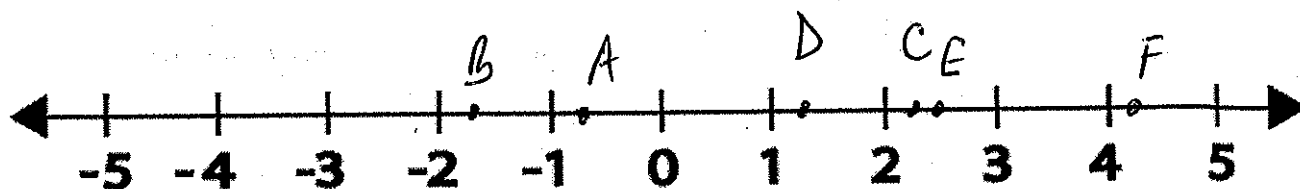
D: $\frac{7}{5} = 1.4$

B: $-\sqrt{3} = -1.73$

E: $2\frac{1}{3} = 2.33$

C: $1.3^2 = 2.20$

F: $4.25 = 4.25$



In Problems 13-18, evaluate using the Order of Operations.
 (SHOW YOUR WORK FOR EACH STEP!)

[5 Points Each]

$$\begin{aligned}
 13.) \quad & 18 - (10 - 7)(16 - 2) \div 6 - 5 \\
 & = 18 - (3)(16 - 2) \div 6 - 5 \\
 & = 18 - (3)(14) \div 6 - 5 \\
 & = 18 - 42 \div 6 - 5 \\
 & = 18 - 7 - 5 \\
 & = 11 - 5 \\
 & = \boxed{6}
 \end{aligned}$$

$$\begin{aligned}
 14.) \quad & 4 - 72 \div (8 - 6) * 3 - 8 \\
 & = 4 - 72 \div (2) * 3 - 8 \\
 & = 4 - 36 * 3 - 8 \\
 & = 4 - 108 - 8 \\
 & = -104 - 8 \\
 & = \boxed{-112}
 \end{aligned}$$

$$\begin{aligned}
 15.) \quad & (-3)^2 - 8 * 6 + 14 \div 2 - 6 \\
 & = 9 - 8 * 6 + 14 \div 2 - 6 \\
 & = 9 - 48 + 14 \div 2 - 6 \\
 & = 9 - 48 + 7 - 6 \\
 & = -39 + 7 - 6 \\
 & = -32 - 6 \\
 & = \boxed{-38}
 \end{aligned}$$

$$\begin{aligned}
 16.) \quad & -3 * (-12) \div 4 * 6 - 2 + 3 \\
 & = 36 \div 4 * 6 - 2 + 3 \\
 & = 9 * 6 - 2 + 3 \\
 & = 54 - 2 + 3 \\
 & = 52 + 3 \\
 & = \boxed{55}
 \end{aligned}$$

$$\begin{aligned}
 17.) \quad & \frac{-2^2 \cdot 6 \div 2 + 1}{20 \div 2 * 5} \\
 & = \frac{-4 \cdot 6 \div 2 + 1}{20 \div 2 * 5} \\
 & = \frac{-24 \div 2 + 1}{20 \div 2 * 5} \\
 & = \frac{-12 + 1}{20 \div 2 * 5} \\
 & = \frac{-11}{20 \div 2 * 5}
 \end{aligned}$$

$$\begin{aligned}
 & = \frac{-11}{10 * 5} \\
 & = \frac{-11}{50} \\
 & = \boxed{-0.22}
 \end{aligned}$$

$$\begin{aligned}
 18.) \quad & (-4)(-6)^2 - 20 \div 5 \cdot 2 + 1 \\
 & = (-4)(36) - 20 \div 5 \cdot 2 + 1 \\
 & = -144 - 20 \div 5 \cdot 2 + 1 \\
 & = -144 - 4 \cdot 2 + 1 \\
 & = -144 - 8 + 1 \\
 & = -152 + 1 \\
 & = \boxed{-151}
 \end{aligned}$$

In Problems 19-22, evaluate the expression knowing that $w = 3$, $x = -2$, $y = 4$, and $z = -5$. (SHOW YOUR WORK FOR EACH STEP!)

[5 Points Each]

19.) $xy - 4z$

$$\begin{aligned} &= (-2)(4) - 4(-5) \\ &= -8 - 4(-5) \\ &= -8 + 20 \\ &= 12 \end{aligned}$$

20.) $x^2 + y^2 - z^2$

$$\begin{aligned} &= (-2)^2 + (4)^2 - (-5)^2 \\ &= 4 + 16 - (-5)^2 \\ &= 4 + 16 - 25 \\ &= 20 - 25 \\ &= -5 \end{aligned}$$

21.) $x^2 - yz + 4x$

$$\begin{aligned} &= (-2)^2 - (4)(-5) + 4(-2) \\ &= 4 - (4)(-5) + 4(-2) \\ &= 4 + 20 + 4(-2) \\ &= 4 + 20 - 8 \\ &= 24 - 8 \\ &= 16 \end{aligned}$$

22.) $\frac{wy \div x}{z - x}$

$$\begin{aligned} &= \frac{(3)(4) \div (-2)}{-5 - (-2)} \\ &= \frac{12 \div (-2)}{-5 - (-2)} \\ &= \frac{-6}{-5 - (-2)} \\ &= \frac{-6}{-3} \\ &= 2 \end{aligned}$$

In Problems 23-30, solve the one-step equation. (SHOW YOUR WORK!)

[3 Points Each]

23.) $\frac{x}{15} = 30$

$$x = 450$$

24.) $-11 + x = -122$

$$x = -111$$

25.) $-50 = x - 24$

$$-26 = x$$

26.) $\frac{3}{4}x = 33$

$$x = 44$$

27.) $2\frac{1}{4}x = 40$

$$x = 17.78$$

28.) $(-1) - 20 = -x$

$$x = 20$$

29.) $\frac{7}{6}x = 31$

$$x = 36.17$$

30.) $-32 = -17 + x$

$$-15 = x$$