

Name: _____

Date: _____

Algebra & Trigonometry Quiz
Chapter R.1

Trip-Wire Diagnostics

Let $\{p,q\}$ be any two integers (i.e. ... -3, -2, -1, 0, 1, 2, 3, ...) BUT where q isn't zero. Consider the fraction $x = p/q$.

Give an example of $\{p,q\}$ where x winds up being an integer:

Give an example of $\{p,q\}$ where x is a rational number:

Yes or No: Can you find an example of $\{p,q\}$ where x is a natural number?

Yes or No: Can you find an example of $\{p,q\}$ where x is a non-repeating decimal?

Core Questions:

For the following sets, draw a graph on the number line. Then write as interval notation.

14. $\{x \mid 1 < x \leq 6\}$

20. $\{x \mid -3 > x\}$

For the following graph, write the interval notation and then write as a set.

26.



Name the property or real numbers illustrated by these statements:

48. $3 + (x + y) = (3 + x) + y$

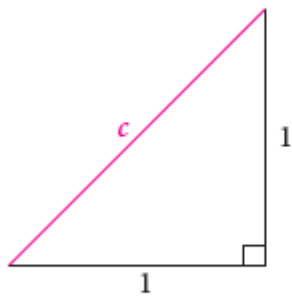
58. $9x + 9y = 9(x + y)$

Find the distance between the following two points on the number line:

74. $-14, -3$

Competitive Problem:

85. The hypotenuse of an isosceles right triangle with legs of length 1 unit can be used to “measure” a value for $\sqrt{2}$ by using the Pythagorean theorem, as shown.



$$\begin{aligned}c^2 &= 1^2 + 1^2 \\c^2 &= 2 \\c &= \sqrt{2}\end{aligned}$$

Draw a right triangle that could be used to “measure” $\sqrt{10}$ units.