

Alg 1: 2.1 Practice Answers

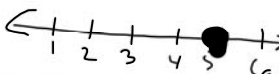
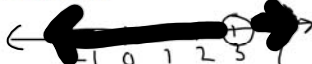
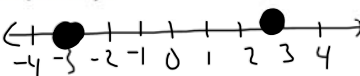

Directions: Determine whether the following number sentences are true or false.

1) $(\sqrt{16})\left(\frac{1}{8}\right) = 0.5^2 + \frac{1}{4}$ $4\left(\frac{1}{8}\right) = 25 + \frac{1}{4}$ $\frac{1}{2} = 1.5$ TRUE	2) $4(12 + 6) = 4(12) + 4(6)$ $4(18) = 48 + 24$ $72 = 72$ TRUE	3) $\frac{8}{3} = 2.667$ $2.666\bar{6} \neq 2.667$ FALSE	4) $\pi = 3.14$ 3.14 is only an approximation and therefore not the same as all values of π FALSE
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Directions: Circle all numbers that will make the equation TRUE.

5) $(x + 2)^2 = 9$ (-5) -1 0 1 5 $(-5+2)^2 = 9$ $(1+2)^2 = 9$ $(-3)^2 = 9$ $3^2 = 9$	6) $\frac{x-1}{x^2+1} = \frac{3}{17}$ 1 3 7 17 $\frac{4-1}{4+1} = \frac{3}{16+1} = \frac{3}{17}$	7) $g^2 = -4$ 2 7 2 4 NONE $(-2)^2 = 4$
8) $g^2 - 5 = -4$ -4 -1 0 1 4 $(-1)^2 - 5 = -4$ $(1)^2 - 5 = -4$ $1 - 5 = -4$ $1 - 5 = -4$	9) $6x - 1 = 11$ -1 2 6 11 $6(2) - 1 = 11$ $12 - 1 = 11$	10) $\frac{x}{4} + 6 = 9$ 4 8 12 16 20 $\frac{12}{4} + 6 = 9$ $3 + 6 = 9$

Directions: Describe the solution set.

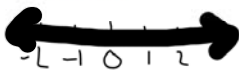
11) $x = 5$ Verbally: The solution set is 5. Graphically:  Set Notation: $\{5\}$	12) $f + 1 \neq 4$ Verbally: The solution set is all real numbers that do not include 3. Graphically:  Set Notation: $\{x \text{ real} \mid x \neq 3\}$
13) $y^2 = 9$ Verbally: The solution set contains 3 and -3. Graphically:  Set Notation: $\{-3, 3\}$	14) $q - 4 \leq 10$ Verbally: The solution set is all real numbers that are less than or equal to 14. Graphically:  Set Notation: $\{q \text{ real} \mid q \leq 14\}$

15) $2(x + 3) = 2x + 6$ $2x + 6 = 2x + 6$

Verbally:

The solution set is the set of all real numbers

Graphically:



Set Notation:

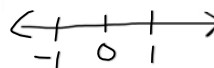
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16) $u - 4 = u + 3$ $-4 = 3$

Verbally:

The solution set is the null set.

Graphically:

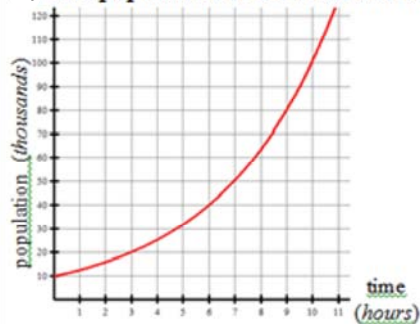


Set Notation:

$\{ \}$

Use the graph to identify the independent and dependent variable. Fill in the table and answer the questions.

17) The population of a certain bacteria grows over time as shown in the graph below.



Independent Variable

$x =$ time in hours

Dependent Variable

$y =$ population in thousands of bacteria

x (hours)	y thousands of bacteria
3	20
6	40
10	100
10.7	120

a) What population did the bacteria start with?

There were 10,000 bacteria to start.

b) How long does it take for the population of bacteria to double? Justify.

It takes three hours to double the population. If we start at 10,000 bacteria, to double it we need to get to 20,000 bacteria and that doesn't happen till it hits 3 hours.