

Page 302 W-UPS (3, 4, 10-13)

Determine whether each relation is a function. If the relation is a function, state the domain and range.

3.

-2	5
8	6
3	12
5	6


 Yes (doesn't repeat)
 D: $\{-2, 3, 5, 8\}$
 R: $\{5, 6, 12\}$

4.

9	6
3	8
4	9.5
9	2

 relation
~~| | |
|---|---|
| 3 | 7 |
| 4 | 6 |
| 9 | 8 |
| 9 | 5 |

 NO~~



Oct 19-11:39 AM

Write a function rule to describe each statement.

10. the cost in dollars of printing dollar bills when it costs 3.8¢ to print a dollar bill $\$.038$
 $c(n) = .038n$
 $y = mx + b$
 $y = .038x$ $34 = \$.03$

11. the amount of money you earn mowing lawns at \$15 per lawn
 $y = 15L$
 $C = 15L$

1	15
2	30
3	45
4	60

12. the profit you make selling flowers at \$1.50 each when each flower costs you \$.80
 $y = 1.50x - .80x$
 $y = .70x$

\$1.50
- .80
Profit

Oct 19-11:41 AM

Write a function rule for each table of values.

13.

0	1
1	3
2	5
-3	-5

$2y = 2x + 1$

↑ slope

← y-intercept

b

Oct 19-11:43 AM

p. 272 $y = x^2$

x	y
-8	64
-4	16
0	0
4	16
8	64

$64 \div -8 = -8$

$16 \div -4 = -4$

$0 \div 0 = 0$

$16 \div 4 = 4$

$64 \div 8 = 8$

$-4 + (+8) = 4$

$0 + (+4) = 4$

$4 - 0 = 4$

$(-8)^2 = 64$

$(-4)^2 = 16$

$0^2 = 0$

$4^2 = 16$

$8^2 = 64$

Oct 19-11:47 AM

18

$$y = .34 + .21(x-1)$$

1	.34
2	.34 + .21(1) =
3	.34 + .21(2) =
4	.34 + .21(4) = .97

19

km	m
x	y
0	0
.5	500
1.0	1000
1.5	1500
2.0	2000

$y = 1000x$

$y = 500x \cdot 2$

Oct 22-5:13 AM

5.7 Notes Day 39

Inductive Reasoning: is making conclusions based on a pattern you observe

A number pattern is also known as a sequence.

A sequence is Arithmetic if there is a common difference.

(- if it up goes up or down by the same amount each time)

Common difference = $\frac{2nd \text{ term} - 1st \text{ term}}{\text{term}}$

3rd - 2nd
4th - 3rd

ex) 2, 4, 6, 8, ... $d = 2$

Oct 19-11:53 AM

Use inductive reasoning to describe each pattern. Then find the next two numbers in each pattern.

1. 4, 6, 8, 10, ...
 $4(15) = 60$
 2. 4, 6, 9, 13, ...
 20.25
 3. 4, 6, 9, 13, ...
 $15 = 18$
 234
 $18+6$
 12, 14
 Rule: multiply 1.5
 NOT ARITHMETIC

4. 3, 3.04, 3.08, 3.12, ...
 5. 3, 3.3, 3.63, 3.993, ...
 6. 3, 1, -1, -3, ...
 3.16, 3.20
 $d = .04$

7. 1, 1.1, 2.2, 3.3, 4.4, ...
 8. 0, 0.01, 0.01, 0.1, 1, ...
 9. 2, 8, 32, 128, ...
 $5.5, 6.6$
 $d = 1.1$
 $\frac{8}{2} = 4$
 $\frac{32}{8} = 4$
 2048

10. $\frac{1}{4}, \frac{1}{9}, \frac{1}{16}, \dots$
 11. 9, -5, -19, -33, ...
 12. 1.5, 7.5, 37.5, 187.5, ...
 $\frac{1}{25}, \frac{1}{36}$
 $-5 - 9 = -14$
 $-19 - 5 = -14$
 $-33 - 19 = -14$
 $-33 - 14 = -47$
 $-47 - 14 = -61$
 Arithmetic $d = -14$

Oct 19-11:51 AM

P. 294 $Tx + bK$
 Find the common difference of each arithmetic sequence.
 Then find the N^{th} term.

13. $-5, -2, 1, 4, \dots$
 14. $-6, -10, -14, -18, \dots$

terms $m = \text{slope} =$
 Common difference

x_0	$f(x)$
1	-5
2	-2
3	1
4	4

$-2 + (-5) = 3$
 $1 + (-2) = 3$
 $4 - 1 = 3$

x_0	$f(x)$
1	-6
2	-10
3	-14
4	-18

-4
 -4
 -4

Arithmetic (Linear)
 n^{th} term $f(n) = m \cdot n + b$
 $y = 3x - 8$
 $y = mx + b$
 n^{th} term: $3n - 8$
 $-10 + (+6) = -4$
 $-14 + (-10) = -4$
 $y = -4x + -2$
 $y = -4x - 2$
 $-4n - 2$

Feb 27-3:38 PM

Find the common difference of each arithmetic sequence.

Then find the N^{th} term.

15. 18, 7, -4, -15, ...

x	f(x)
1	18
2	7
3	-4
4	-15

-11
-11
-11

$$y = -11x + 29$$

16. 8, 21, 34, 47, ...

21-8 34-21

47-34

x	f(x)

13
13
13

$d = 13$

Feb 27-3:38 PM

Find the common difference of each arithmetic sequence.

Then find the N^{th} term.

17. $\frac{1}{2}, \frac{1}{3}, \frac{1}{6}, 0, \dots$

18. 0.7, 1.5, 2.3, 3.1, ...

$$\frac{1}{3} - \frac{1}{2} = -\frac{1}{6}$$

x	f(x)
1	$\frac{1}{2}$
2	$\frac{1}{3}$
3	$\frac{1}{6}$
4	0

$\frac{1}{6} - \frac{1}{3} = -\frac{1}{6}$
 $0 - \frac{1}{6} = -\frac{1}{6}$
 $d = -\frac{1}{6}$

x	f(x)

$$\frac{1}{2} + \frac{1}{6} = \frac{2}{3}$$

$$y = -\frac{1}{6}x + \frac{2}{3}$$

Feb 27-3:38 PM

Find the common difference of each arithmetic sequence.

Then find the N^{th} term.

19. 8, 6, 4, 2, ...

20. 10, 22, 34, 46, ...

x	$f(x)$

x	$f(x)$

Feb 27-3:38 PM

Find the common difference of each arithmetic sequence.

Then find the N^{th} term.

21. -9, -4, 1, 6, ...

x	$f(x)$

Feb 27-3:38 PM

Is each given sequence arithmetic? Justify your answer.

49. $0.3, 3, 30, 300, \dots$

50. $-3, -7, -11, -15, \dots$

51. $1, 8, 27, 64, \dots$

52. $2, 4, 8, 16, 32, \dots$

Oct 19-11:52 AM