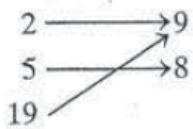
Alg Name_____

# 3-14 Relations & Functions_hw

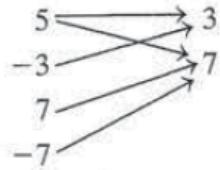
Date_____ Period____

Determine whether each relation is a function.

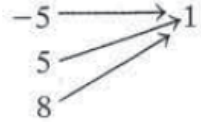
**1. Domain** **Range**




**2. Domain** **Range**




**3. Domain** **Range**




Find the domain and range of each relation. Is the relation a function?

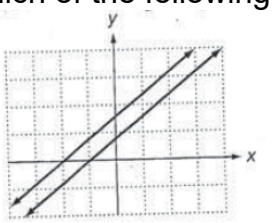
**4.** $\{(6, -6), (7, -7), (3, -3), (4, -4)\}$

**5.** $\{(a, b), (a, c), (d, e)\}$

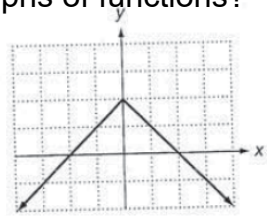
**6.** $\{(4, 1), (7, 1), (-2, 4), (1, 1)\}$

Which of the following are graphs of functions?

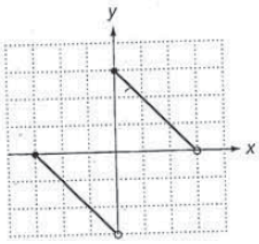
7.



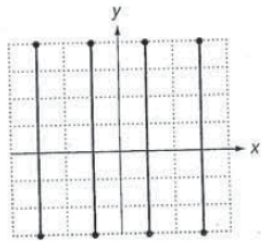

8.




9.




10.




Find the indicated outputs for these functions.

**11.** $g(s) = 2s + 4$; find $g(1)$, $g(-7)$, and $g(6)$.

**12.** $h(x) = 19$; find $h(4)$, $h(-6)$, and $h(12)$.

**13.** $F(x) = 2x^2 - 3x + 2$; find $F(0)$, $F(-1)$, and $F(2)$.

**14.** $P(x) = 3x^2 - 2x + 5$; find $P(0)$, $P(-2)$, and $P(3)$.

**Evaluate each function.**

15) $h(t) = t^3 - 5t^2$; Find $h(-4)$

16) $h(n) = n^2 + 2$; Find $h(-3)$

17) $w(n) = -4n + 2$; Find $w(-10)$

18) $f(n) = n^3 - 5$; Find $f(-2)$

19) $h(x) = |-3x|$; Find $h(-1)$

20) $w(x) = x^2 - 2$; Find $w(-10)$

21) $w(x) = x^3 + 1$; Find $w(-2)$

22) $h(t) = t^3 + 3$; Find $h(4)$

23) $w(t) = |2t| - 3$; Find $w(-9)$

24) $g(x) = -|x|$; Find $g(-1)$

25) $w(x) = x^3 + 1$; Find $w(-4)$

26) $h(x) = x^2 - 4$; Find $h(-4)$

**Perform the indicated operation.**

27) $h(t) = 4t + 2$
$g(t) = 2t + 2$
Find $h(-5) - g(-5)$

28) $h(x) = -2x$
$g(x) = 2x - 2$
Find $h(2) + g(2)$

29) $g(x) = x + 2$
$h(x) = -2x - 3$
Find $g(-1) + h(-1)$

30) $h(a) = 4a - 1$
$g(a) = 2a + 5$
Find $h(-4) - g(-4)$

31) $h(a) = a^2 - 3a$
$g(a) = a + 2$
Find $h(3) - g(3)$

32) $f(x) = 4x + 3$
$g(x) = x^2 - 5x$
Find $f(1) - g(1)$

33) $g(a) = 3a + 3$
$h(a) = 3a - 3$
Find $g(-10) - h(-10)$

34) $h(x) = x^3 + 5x^2$
$g(x) = x + 5$
Find $h(1) + g(1)$

35) $h(n) = 2n - 2$
$g(n) = n^2 + 2n$
Find $h(-1) - g(-1)$

36) $f(x) = 4x - 3$
$g(x) = x^3 - 4$
Find $f(-6) - g(-6)$

37) $h(x) = 3x - 4$
$g(x) = x^3 - x$
Find $h(3) + g(3)$

38) $f(t) = 2t^3 + 3t$
$g(t) = 4t + 5$
Find $f(1) + g(1)$

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## Answers to 3-14 Relaitons & Functions_hw

1. Yes
2. No
3. Yes
4. Domain: {3, 4, 6, 7},
   Range: {−7, −6, −4, −3}; yes
5. Domain: {a, d},
   Range: {b, c, e}; no
6. Domain: {−2, 1, 4, 7},
   Range: {1, 4}; yes
7. No
8. Yes
9. Yes
10. No
11. 6, −10, 16
12. 19, 19, 19
13. 2, 7, 4
14. 5, 21, 26

15) −144
16) 11
17) 42
18) −13
19) 3
20) 98
21) −7
22) 67
23) 15
24) −1
25) −63
26) 12
27) −10
28) −2
29) 0
30) −14
31) −5
32) 11
33) 6
34) 12
35) −3
36) 193
37) 29
38) 14