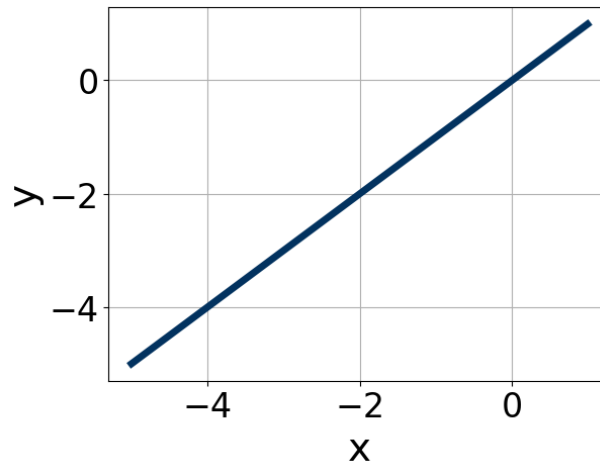1. Is the graph below a linear function?

    A. Yes, the graph is linear

    B. No, the graph is not linear.

---

2. Is the following relation a function?

x	y
1	4.0
2	8.0
3	16.0
4	32.0
5	64.0
6	128.0
7	256.0

    A. Yes

    B. No

---

3. Is the equation below a linear function?

$$f(x) = -2(x + 5) + 2$$

    A. Yes, the equation is linear

    B. No, the equation is not linear.
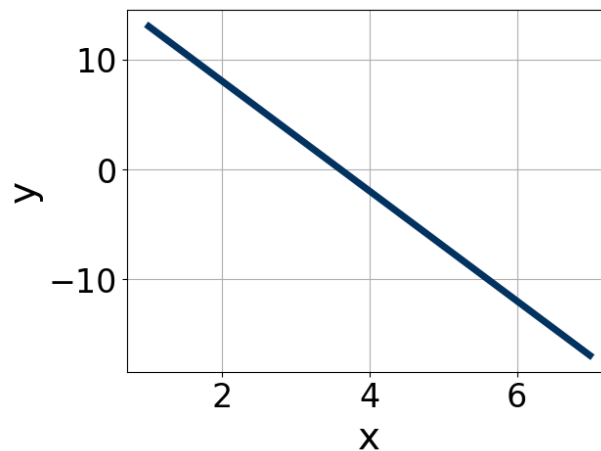
4. Is the following relation a linear function?

x	y
1	-3
2	-6
3	-9
4	9
3	3
2	6
1	9

   A. Yes

   B. No

5. Is the graph below a linear function?

   A. Yes, the graph is linear

   B. No, the graph is not linear.

6. Is the following relation a function?

$$(-3, 135), (-2, 40), (-1, 5), (0, 0), (1, -5), (2, -40), (3, -135)$$

   A. Yes

B. No

---

7. Is the equation below a linear function?

$$f(x) = 4\sqrt{3x - 7} + 7$$

A. Yes, the equation is linear

B. No, the equation is not linear.

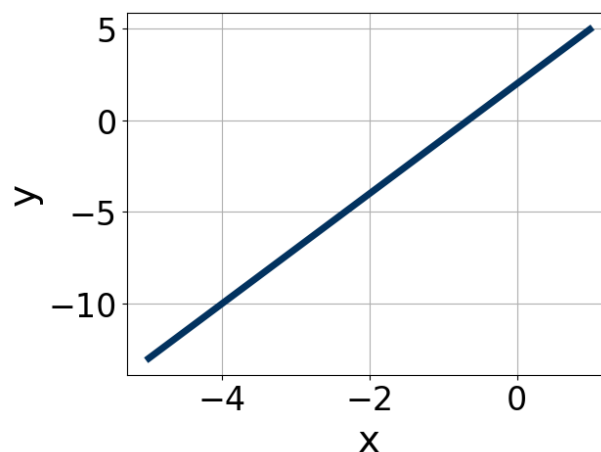8. Is the following relation a linear function?

x	y
1	-3
2	-12
3	-27
4	-48
5	48
4	3
3	12

A. Yes

B. No

---

9. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

10. Is the following relation a function?

x	y
-1	1
0	0
1	-1
2	-8
3	-27
4	-64
5	-125

A. Yes

B. No

11. Is the equation below a linear function?

$$f(x) = 4(2)^{x+5} - 3$$

A. Yes, the equation is linear

B. No, the equation is not linear.
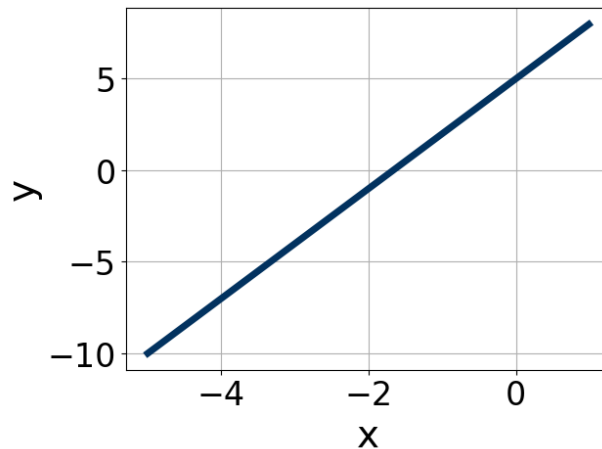
12. Is the following relation a linear function?

x	y
3	-3.46
4	-4.0
5	-4.0
4	3.46
3	4.0
2	4.47
1	4.9

A. Yes

B. No

---

13. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

---

14. Is the following relation a function?

$$(3, 0.12), (4, 0.06), (5, 0.03), (6, 0.02), (7, 0.01), (8, 0.0), (9, 0.0)$$

A. Yes

B. No

---

15. Is the equation below a linear function?

$$f(x) = -2(x - 2) + 2$$

A. Yes, the equation is linear

B. No, the equation is not linear.

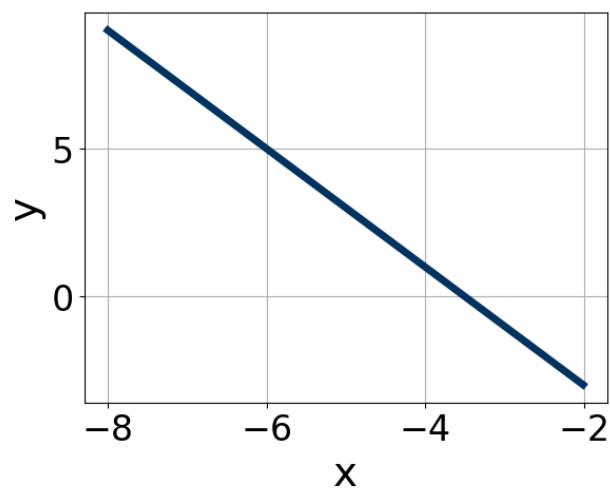16. Is the following relation a linear function?

x	y
3	8.66
4	10.0
5	11.18
6	-11.18
5	-8.66
4	-10.0
3	-11.18

A. Yes

B. No

---

17. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

---

18. Is the following relation a function?

x	y
3	-3
4	-4
5	-5
6	-5
5	3
4	4
3	5

A. Yes

B. No

---

19. Is the equation below a linear function?

$$f(x) = 2 \left(\frac{1}{2} \right)^{x-2} + 1$$

A. Yes, the equation is linear

B. No, the equation is not linear.

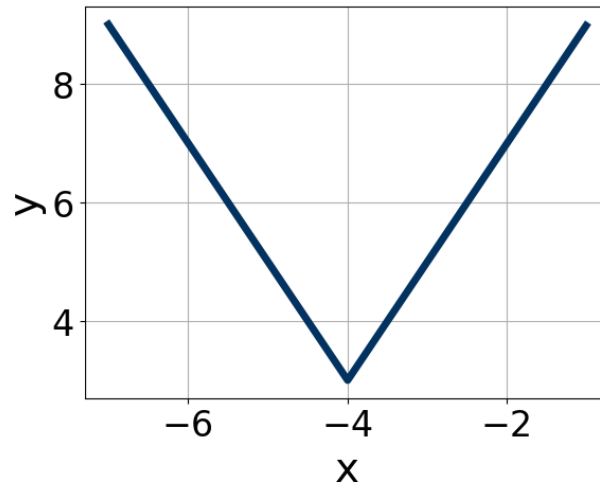20. Is the following relation a linear function?

x	y
2	-7.07
3	-8.66
4	-8.66
3	7.07
2	8.66
1	10.0
0	11.18

A. Yes

B. No

---

21. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

---

22. Is the following relation a function?

x	y
2	-20
3	-45
4	-80
5	-125
6	125
5	20
4	45

A. Yes

B. No

---

23. Is the equation below a linear function?

$$f(x) = -2|x - 1| + 2$$

A. Yes, the equation is linear

B. No, the equation is not linear.
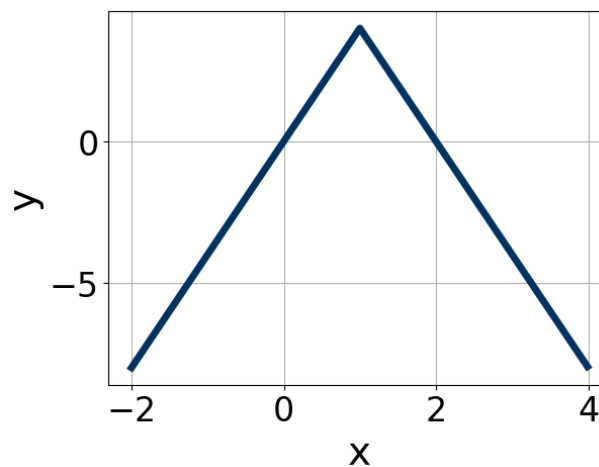
---

24. Is the following relation a linear function?

x	y
2	-8
3	-12
4	-16
5	16
4	8
3	12
2	16

A. Yes

B. No

---

25. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

---

26. Is the following relation a function?

$$(4, 6.0), (5, 6.71), (6, 7.35), (7, 7.94), (8, -7.94), (7, -6.0), (6, -6.71)$$

A. Yes

B. No

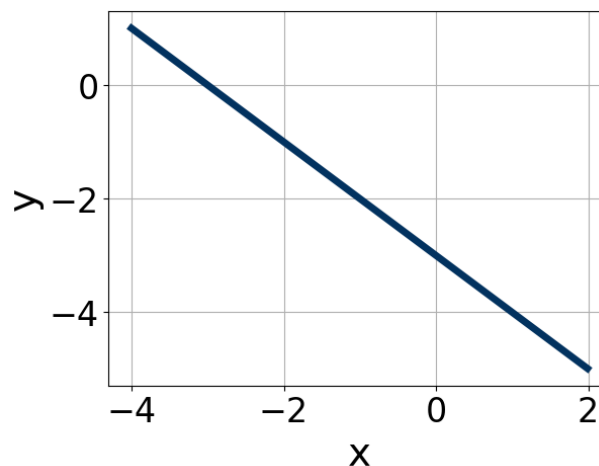27. Is the equation below a linear function?

$$f(x) = -3\sqrt{4x + 5} + 6$$

A. Yes, the equation is linear

B. No, the equation is not linear.

28. Is the following relation a linear function?

x	y
-2	-5
-1	-2
0	1
1	4
2	7
3	10
4	13

A. Yes

B. No

29. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

30. Is the following relation a function?

x	y
1	-5
2	-10
3	-15
4	-20
5	20
4	5
3	10

A. Yes

B. No

31. Is the equation below a linear function?

$$f(x) = -2|x - 3| + 2$$

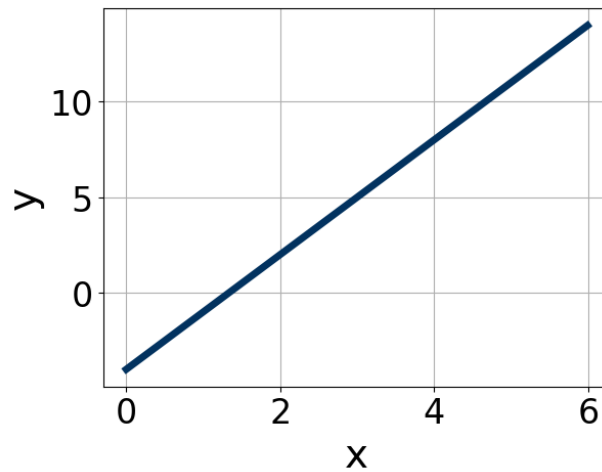A. Yes, the equation is linear

B. No, the equation is not linear.

32. Is the following relation a linear function?

x	y
-3	-14
-2	-7
-1	0
0	7
1	14
2	21
3	28

A. Yes

B. No

33. Is the graph below a linear function?

   A. Yes, the graph is linear

   B. No, the graph is not linear.

34. Is the following relation a function?

x	y
2	1.41
3	1.73
4	2.0
5	-2.0
4	-1.41
3	-1.73
2	-2.0

   A. Yes

   B. No

35. Is the equation below a linear function?

$$f(x) = 5(x - 1) - 5$$

   A. Yes, the equation is linear

B. No, the equation is not linear.

36. Is the following relation a linear function?
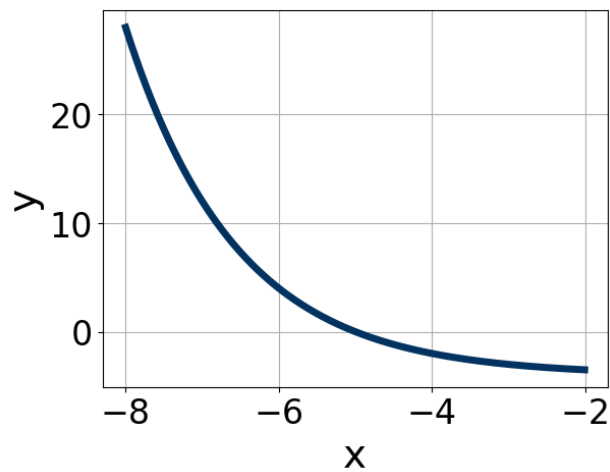
x	y
3	-9
4	-16
5	-25
6	-25
5	9
4	16
3	25

A. Yes

B. No

37. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

38. Is the following relation a function?

x	y
2	8
3	12
4	16
5	16
4	-8
3	-12
2	-16

A. Yes

B. No

---

39. Is the equation below a linear function?

$$f(x) = 2(x - 3) - 1$$

A. Yes, the equation is linear

B. No, the equation is not linear.

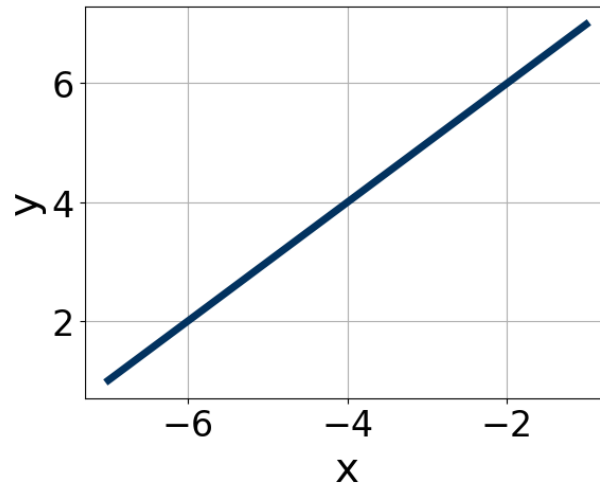
40. Is the following relation a linear function?

x	y
1	-3.0
2	-4.24
3	4.24
2	3.0
1	4.24
0	5.2
-1	6.0

A. Yes

B. No

---

41. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

42. Is the following relation a function?

$$(1, -4.0), (2, -5.66), (3, -6.93), (4, -8.0), (5, -8.94), (6, -9.8), (7, -10.58)$$

A. Yes

B. No

43. Is the equation below a linear function?

$$f(x) = 5(x + 5) - 3$$

A. Yes, the equation is linear

B. No, the equation is not linear.
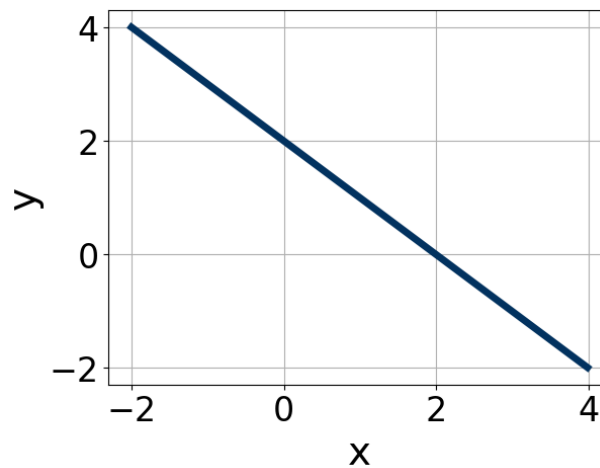
44. Is the following relation a linear function?

x	y
1	4.0
2	5.66
3	6.93
4	8.0
5	8.94
6	9.8
7	10.58

A. Yes

B. No

45. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

46. Is the following relation a function?

x	y
2	-16
3	-54
4	-128
5	-250
6	-432
7	-686
8	-1024

A. Yes

B. No

47. Is the equation below a linear function?

$$f(x) = 3(x + 5) - 5$$

A. Yes, the equation is linear

B. No, the equation is not linear.
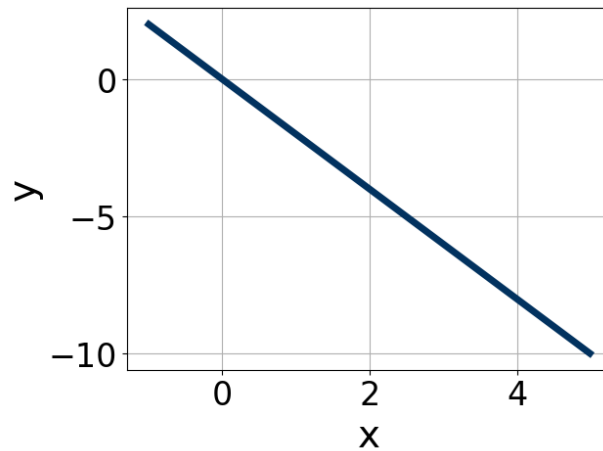
48. Is the following relation a linear function?

x	y
1	2.0
2	2.83
3	3.46
4	4.0
5	4.47
6	4.9
7	5.29

A. Yes

B. No

49. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

50. Is the following relation a function?

x	y
4	-64
5	-125
6	-216
7	-343
8	-512
9	-729
10	-1000

A. Yes

B. No

51. Is the equation below a linear function?

$$f(x) = -3\sqrt[3]{-6x + 7} + 4$$

A. Yes, the equation is linear

B. No, the equation is not linear.
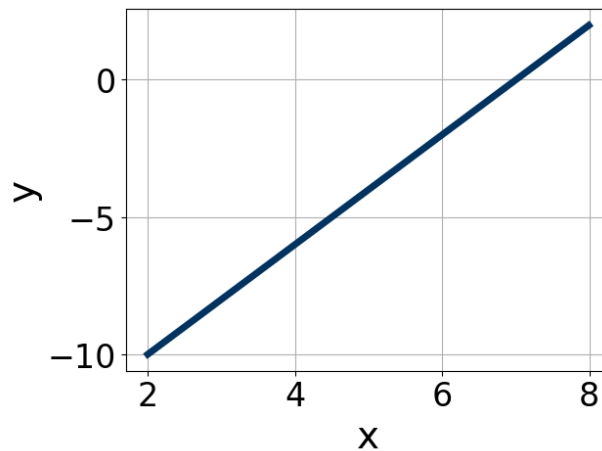
52. Is the following relation a linear function?

x	y
1	1.0
2	1.41
3	1.73
4	-1.73
3	-1.0
2	-1.41
1	-1.73

A. Yes

B. No

53. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

54. Is the following relation a function?

x	y
1	5.0
2	7.07
3	8.66
4	10.0
5	-10.0
4	-5.0
3	-7.07

A. Yes

B. No

---

55. Is the equation below a linear function?

$$f(x) = 4(x + 4) + 1$$

A. Yes, the equation is linear

B. No, the equation is not linear.

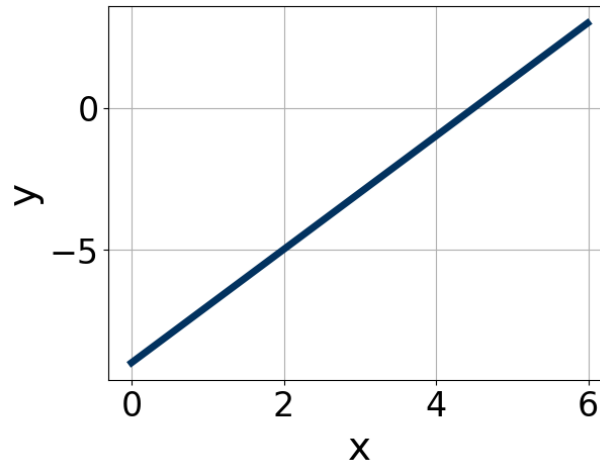56. Is the following relation a linear function?

x	y
4	10.0
5	11.18
6	12.25
7	-12.25
6	-10.0
5	-11.18
4	-12.25

A. Yes

B. No

---

57. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

---

58. Is the following relation a function?

x	y
1	10
2	14
3	18
4	22
5	26
6	30
7	34

A. Yes

B. No

---

59. Is the equation below a linear function?

$$f(x) = 3(x - 5) - 4$$

A. Yes, the equation is linear

B. No, the equation is not linear.
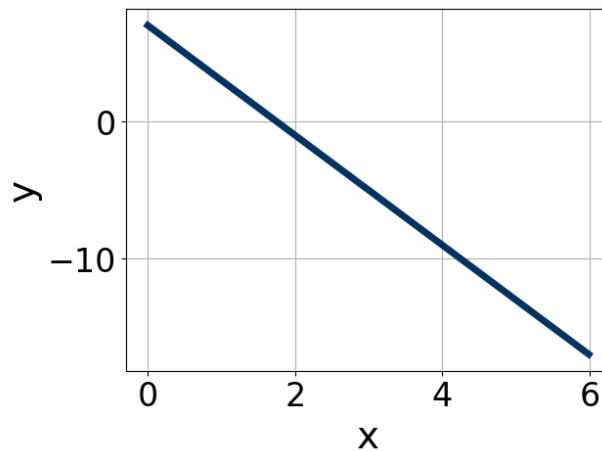
---

60. Is the following relation a linear function?

x	y
1	-5
2	-20
3	-45
4	-80
5	-80
4	5
3	20

  A. Yes

  B. No

---

61. Is the graph below a linear function?

  A. Yes, the graph is linear

  B. No, the graph is not linear.

---

62. Is the following relation a function?

x	y
3	-3.46
4	-4.0
5	-4.47
6	-4.9
7	-5.29
8	-5.66
9	-6.0

A. Yes

B. No

---

63. Is the equation below a linear function?

$$f(x) = -5(x - 1) - 2$$

A. Yes, the equation is linear

B. No, the equation is not linear.

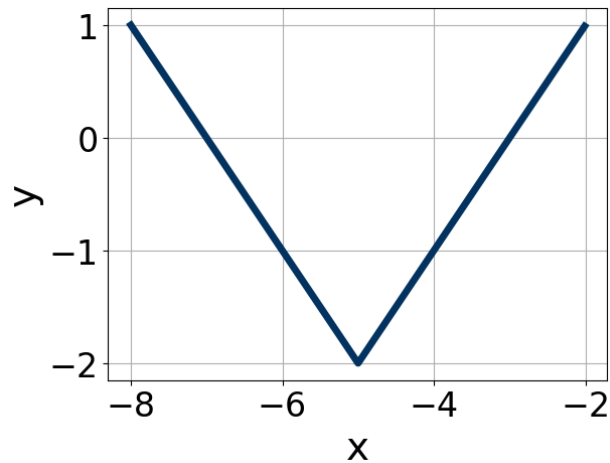64. Is the following relation a linear function?

x	y
3	-18
4	-32
5	-50
6	-72
7	-72
6	18
5	32

A. Yes

B. No

---

65. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

---

66. Is the following relation a function?

x	y
2	1.26
3	1.44
4	1.59
5	1.71
6	1.82
7	1.91
8	2.0

A. Yes

B. No

---

67. Is the equation below a linear function?

$$f(x) = -3(x + 3)^4 + 1$$

A. Yes, the equation is linear

B. No, the equation is not linear.
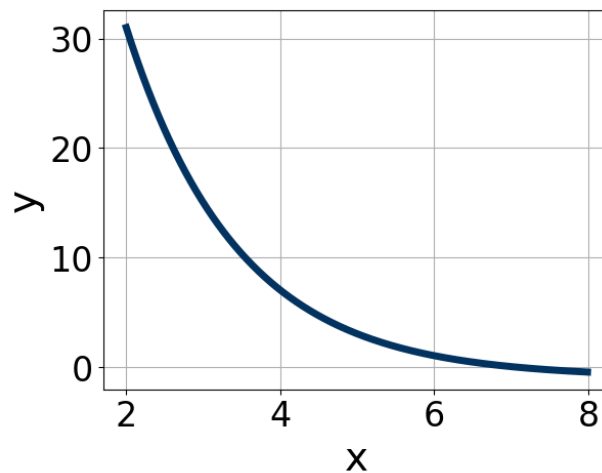
---

68. Is the following relation a linear function?

x	y
2	-4.24
3	-5.2
4	-6.0
5	-6.71
6	-6.71
5	4.24
4	5.2

A. Yes

B. No

---

69. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

---

70. Is the following relation a function?

$$(1, 4), (2, 16), (3, 36), (4, 64), (5, 64), (4, -4), (3, -16)$$

A. Yes

B. No

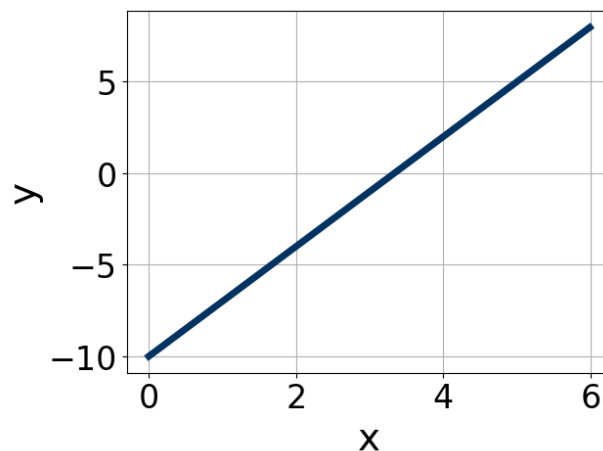71. Is the equation below a linear function?

$$f(x) = -5(x + 1) + 3$$

A. Yes, the equation is linear

B. No, the equation is not linear.

72. Is the following relation a linear function?

x	y
-1	-5
0	1
1	7
2	13
3	19
4	25
5	31

A. Yes

B. No

73. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

---

74. Is the following relation a function?

x	y
1	-1
2	-4
3	-9
4	-16
5	16
4	1
3	4

A. Yes

B. No

---

75. Is the equation below a linear function?

$$f(x) = 2(x - 2) + 2$$

A. Yes, the equation is linear

B. No, the equation is not linear.

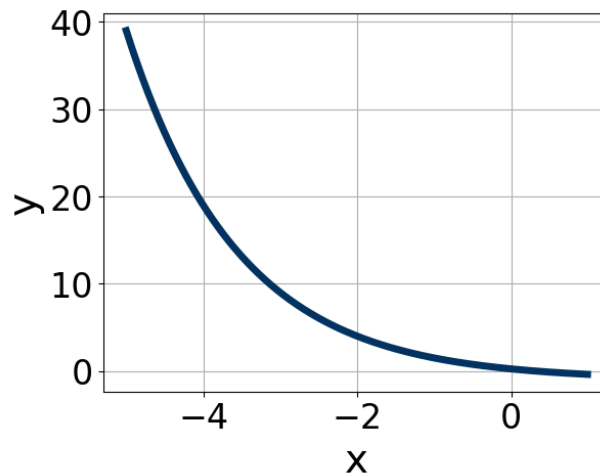76. Is the following relation a linear function?

x	y
-2	-7
-1	-1
0	5
1	11
2	17
3	23
4	29

A. Yes

B. No

77. Is the graph below a linear function?

    A. Yes, the graph is linear

    B. No, the graph is not linear.

78. Is the following relation a function?

x	y
1	4.0
2	8.0
3	16.0
4	32.0
5	64.0
6	128.0
7	256.0

    A. Yes

    B. No

79. Is the equation below a linear function?

$$f(x) = -4\sqrt[3]{7x + 6} - 3$$

    A. Yes, the equation is linear

B. No, the equation is not linear.

80. Is the following relation a linear function?
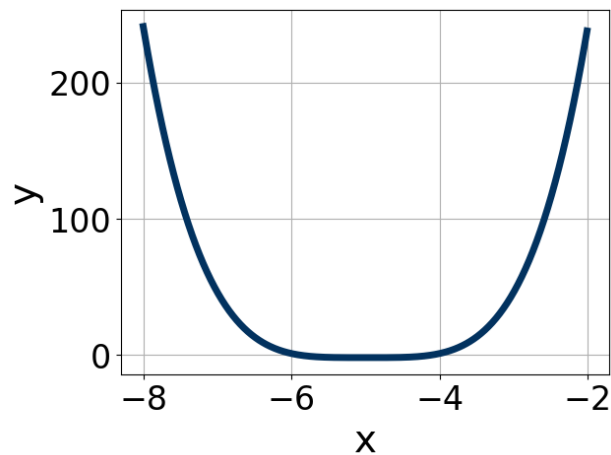
x	y
1	2.0
2	2.83
3	-2.83
2	-2.0
1	-2.83
0	-3.46
-1	-4.0

A. Yes

B. No

81. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

82. Is the following relation a function?

$$(3, -27), (4, -48), (5, -75), (6, 75), (5, 27), (4, 48), (3, 75)$$

A. Yes

B. No

---

83. Is the equation below a linear function?

$$f(x) = 2(x + 4) + 1$$

A. Yes, the equation is linear

B. No, the equation is not linear.

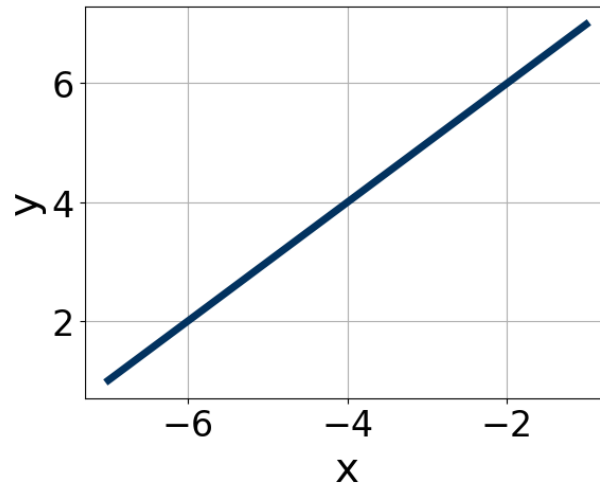84. Is the following relation a linear function?

x	y
3	15
4	20
5	20
4	-15
3	-20
2	-25
1	-30

A. Yes

B. No

---

85. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

86. Is the following relation a function?

x	y
4	-7.94
5	-8.55
6	-9.09
7	-9.56
8	-10.0
9	-10.4
10	-10.77

A. Yes

B. No

87. Is the equation below a linear function?

$$f(x) = 5(x - 5) - 3$$

A. Yes, the equation is linear

B. No, the equation is not linear.
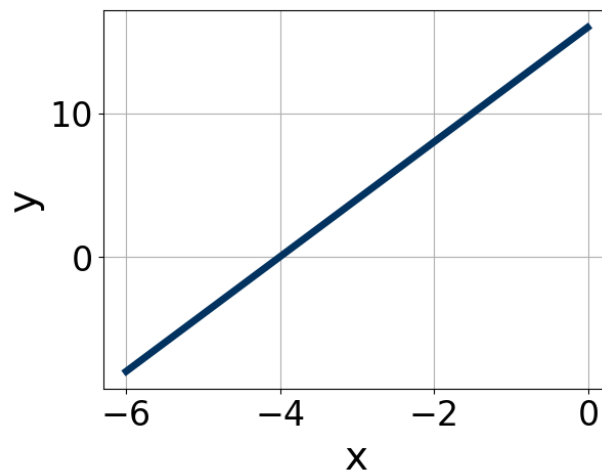
88. Is the following relation a linear function?

x	y
3	-45
4	-80
5	80
4	45
3	80
2	125
1	180

A. Yes

B. No

---

89. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

---

90. Is the following relation a function?

x	y
3	-27
4	-48
5	-75
6	-108
7	-147
8	-192
9	-243

A. Yes

B. No

---

91. Is the equation below a linear function?

$$f(x) = -5(x+5)^4 + 2$$

A. Yes, the equation is linear

B. No, the equation is not linear.

---

92. Is the following relation a linear function?
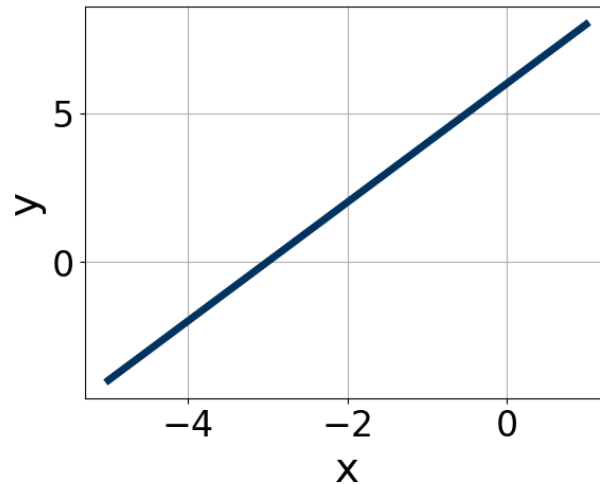
x	y
2	6.3
3	7.21
4	7.94
5	8.55
6	9.09
7	9.56
8	10.0

A. Yes

B. No

---

93. Is the graph below a linear function?

    A. Yes, the graph is linear

    B. No, the graph is not linear.

---

94. Is the following relation a function?

$$(-4, -48), (-3, -27), (-2, -12), (-1, -3), (0, 0), (1, -3), (2, -12)$$

    A. Yes

    B. No

---

95. Is the equation below a linear function?

$$f(x) = 5(x - 5) + 2$$

    A. Yes, the equation is linear
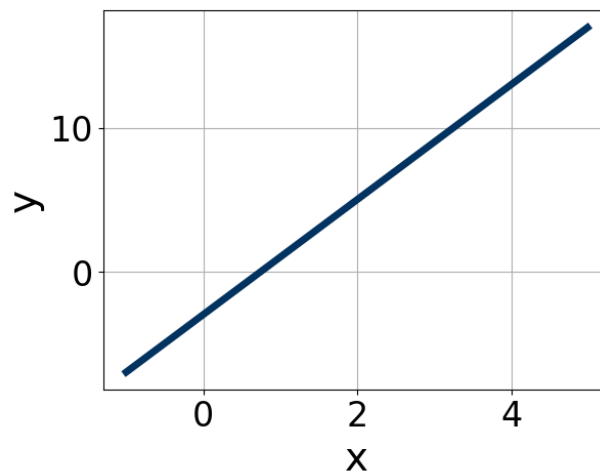
    B. No, the equation is not linear.

---

96. Is the following relation a linear function?

x	y
1	-2
2	-4
3	-4
2	2
1	4
0	6
-1	8

A. Yes

B. No

97. Is the graph below a linear function?

A. Yes, the graph is linear

B. No, the graph is not linear.

98. Is the following relation a function?

$$(4, 0.12), (5, 0.06), (6, 0.03), (7, 0.02), (8, 0.01), (9, 0.0), (10, 0.0)$$

A. Yes

B. No

99. Is the equation below a linear function?

$$f(x) = 4(x + 5) - 1$$

   A. Yes, the equation is linear

   B. No, the equation is not linear.

100. Is the following relation a linear function?

x	y
2	-0.25
3	-0.12
4	-0.06
5	-0.03
6	-0.02
7	-0.01
8	-0.0

   A. Yes

   B. No