Algebra/Geometry Name_____ ID: 1

Summer Math Packet - Part 1

Date_____ Period____

Welcome to Arlington Tech! Students taking our Algebra/Geometry course complete Algebra 1 in the first semester and take the SOL in mid-January. We jump right into instruction the first week of school and have multiple tests in September. Completing parts 1 and 2 of this review of the Math 8 Standards will make your life easier that first semester.

QR codes link to Khan Academy in case you need some assistance. You can also refer to https://www.khanacademy.org/math/grade-8-virginia for review of all Math 8 Standards.

Show work as necessary for credit. Some sections require you to NOT use a calculator.

This packet is due TWO WEEKS AFTER the start of school.

1) What was your grade in Math 8 and your Math 8 SOL score?

8.3a - Determine both the positive and negative square roots of the perfect squares. DO NOT USE A CALCULATOR!!! (these should be memorized.)

2) $\sqrt{4}$

3) $\sqrt{25}$

4) $\sqrt{0}$

5) $\sqrt{121}$

6) $\sqrt{1}$

7) $\sqrt{16}$

8) $\sqrt{100}$

9) $\sqrt{64}$

10) $\sqrt{81}$

11) $\sqrt{144}$

12) $-\sqrt{36}$

13) $\sqrt{9}$

14) $\sqrt{169}$

15) $-\sqrt{49}$

8.3b - Estimate the square root and determine the two consectutive integers between which the square root lies. DO NOT USE A CALCULATOR!!!!!

16) $\sqrt{5}$

17) $\sqrt{142}$

18) $\sqrt{98}$

19) $\sqrt{101}$

20) $\sqrt{46}$

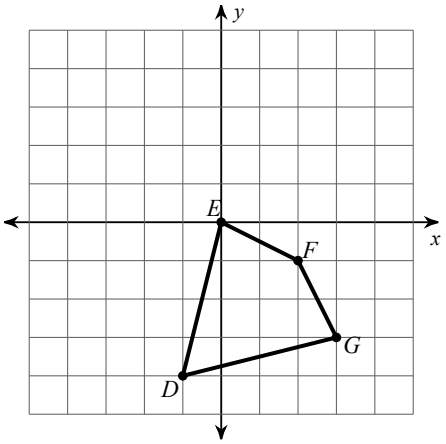
21) $\sqrt{63}$

22) $\sqrt{78}$

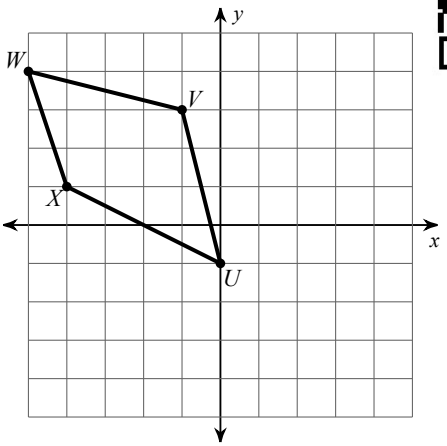
23) $\sqrt{120}$

8.7a Graph the image of the figure using the transformation given.

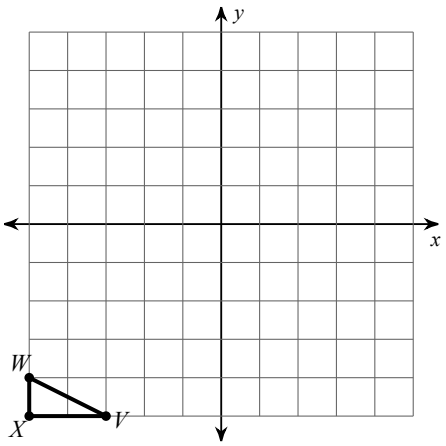
24) reflection across $y = -1$



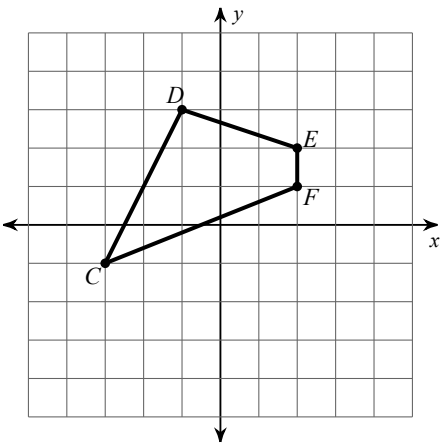
25) reflection across the y-axis



26) reflection across $x = -1$

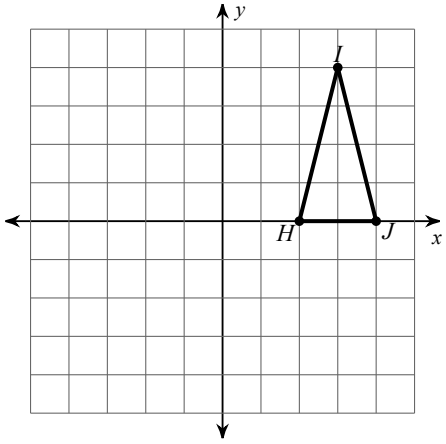


27) reflection across the y-axis

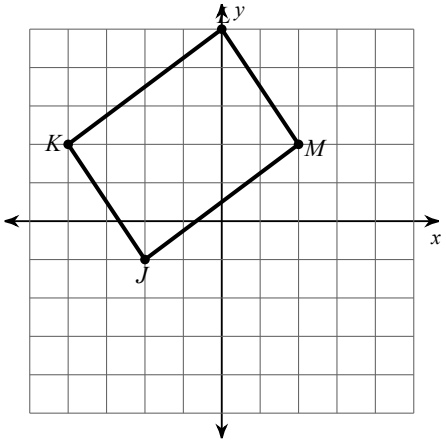


8.7a Find the coordinates of the vertices of each figure after the given transformation.

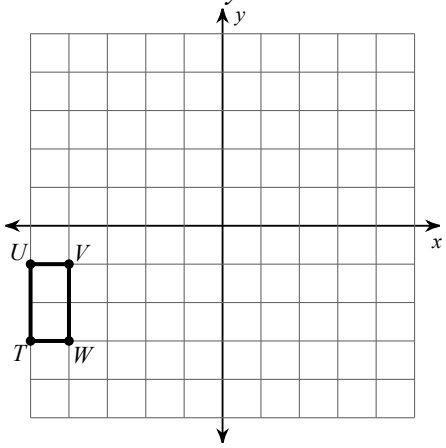
28) reflection across the y-axis



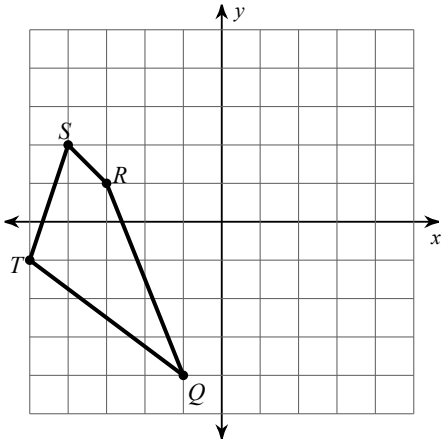
29) translation: 2 units right and 3 units down



30) reflection across $y = 1$

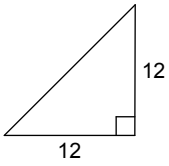


31) reflection across $x = -3$



8.9 - Find each missing length to the nearest tenth.

32)



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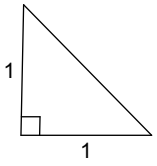

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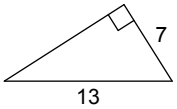

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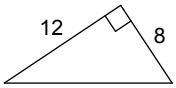

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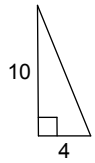

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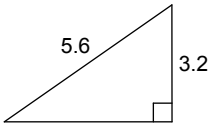

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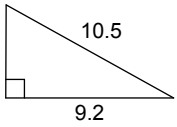

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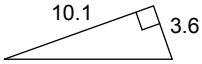

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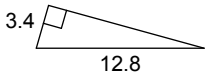

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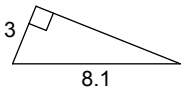
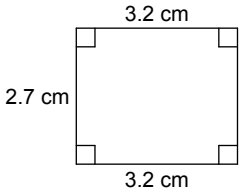


8.10 Find the area and perimeter of each figure.

42)



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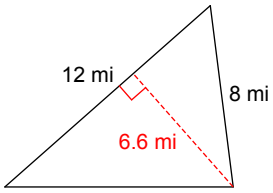

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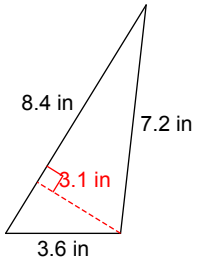

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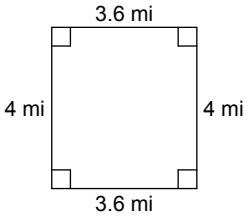

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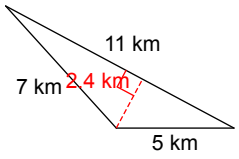

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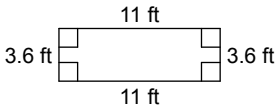

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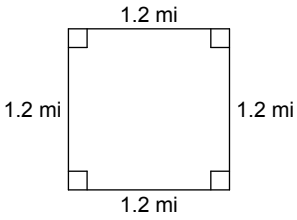

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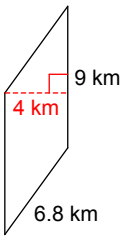
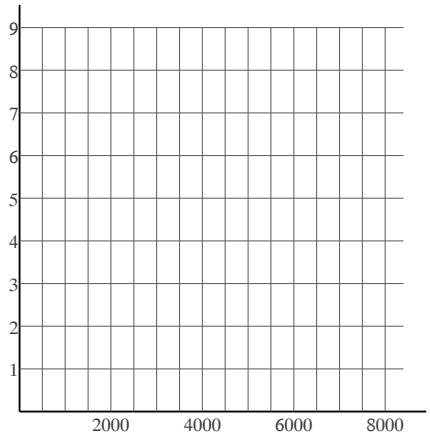


8.13 - Construct a scatter plot. State if there appears to be a positive correlation, negative correlation, or no correlation. When there is a correlation, identify the relationship as linear or nonlinear.

50)

X	Y
500	4.9
2,000	5.6
5,000	5.8
5,200	8.4
5,300	8.4

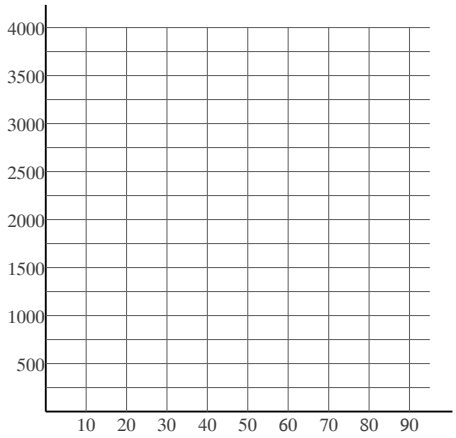
X	Y
5,800	3.3
6,100	0.9
6,500	2.6
7,300	5.4
8,400	5.3



51)

X	Y
16	1,100
20	1,600
40	2,000
43	2,400
51	2,400

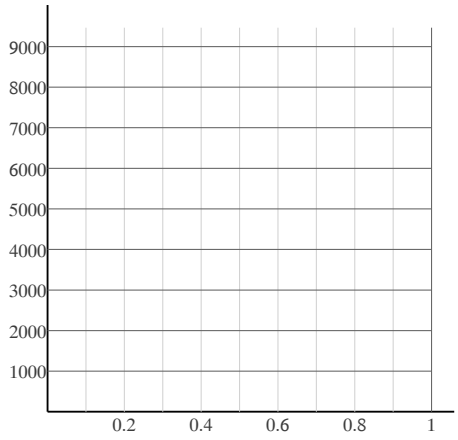
X	Y
57	2,600
69	3,000
82	3,200
92	3,900
95	4,000



52)

X	Y
0.1	1
0.3	9
0.3	13
0.4	36
0.4	48

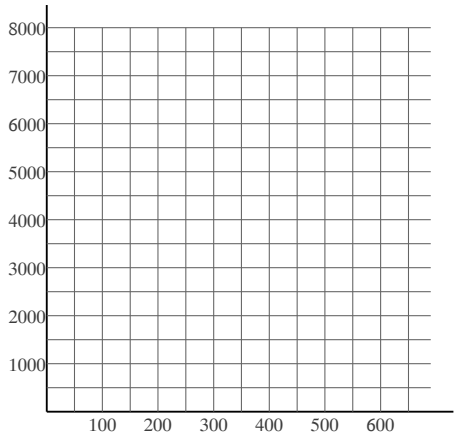
X	Y
0.7	827
0.7	1,149
0.8	2,602
0.8	2,875
0.9	9,464



53)

X	Y
10	7,000
40	6,000
100	1,000
100	6,000
120	6,000

X	Y
130	3,000
200	2,000
380	8,000
650	4,000
690	6,000



8.14a Evaluate each using the values given.

54) $p + pm$; use $m = 2$, and $p = 5$

55) $m - p^2$; use $m = 5$, and $p = 2$

56) $a - b + a$; use $a = 6$, and $b = 5$

57) $z + z - y$; use $y = 5$, and $z = 6$

58) $3(j + h)$; use $h = 2\frac{1}{2}$, and $j = 1\frac{4}{5}$

59) $a + a + b$; use $a = 2$, and $b = 3\frac{4}{5}$

60) $\frac{1}{p} + m$; use $m = \frac{3}{2}$, and $p = 1\frac{5}{6}$

61) $yx + y$; use $x = \frac{1}{2}$, and $y = 3\frac{1}{4}$

62) $((y - 2)(y - x)) \div 2$; use $x = 5$, and $y = 4$

63) $y - y + x + 2 \div 2$; use $x = 2$, and $y = 4$

64) $q \div 2 - (q - (q - p))$; use $p = -6$, and $q = -2$

65) $p - q \div 3 + p + p$; use $p = 4$, and $q = 3$

66) $6 + y + x^2 + y$; use $x = -6$, and $y = -2$

67) $r - rq - 6 \div 6$; use $q = -2$, and $r = 5$

68) $y - x \div 3 + x + y$; use $x = -3$, and $y = -6$

69) $-2ba - (-3 + a)$; use $a = -4$, and $b = -2$

8.14b Simplify each expression.

70) $1 + 8n - 6$

71) $5x + 1 + 5x - 6$

72) $-(5x + 9)$

73) $-9(b - 10)$

74) $9(-9 - 9m)$

75) $8(4 + 10n)$

76) $\frac{21}{10}n - \frac{37}{10} + \frac{4}{7}$

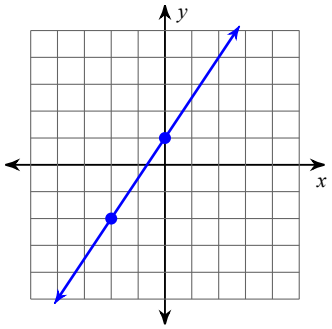
77) $-\frac{10}{3}n - \frac{1}{2}n$

78) $\frac{4}{3}n + \frac{44}{9}n$

79) $\frac{4}{3}x - \frac{23}{9}x$

8.16a Find the slope of each line.

80)



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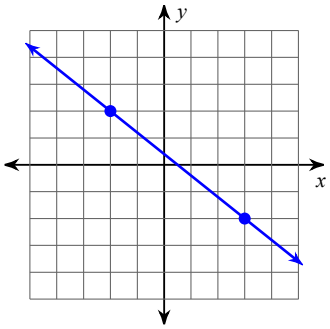

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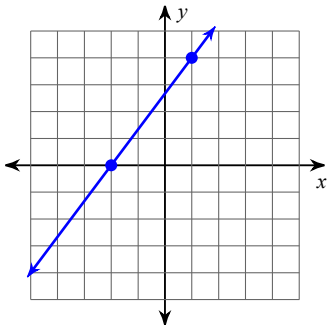

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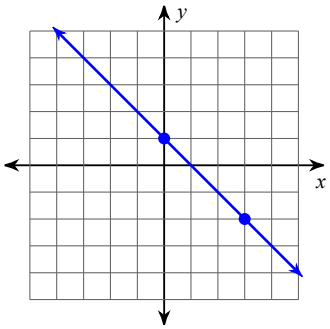

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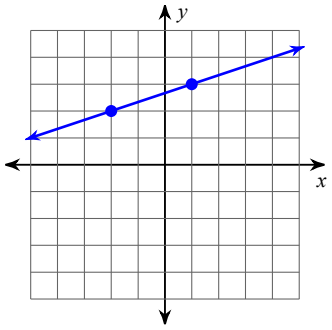

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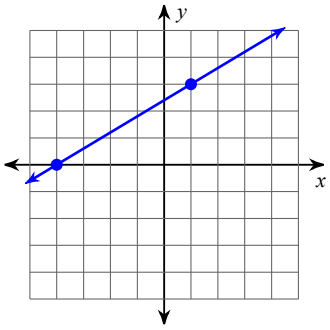
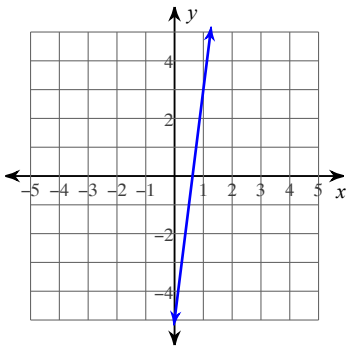


8.16b - Write the slope-intercept form of the equation of each line.

86)



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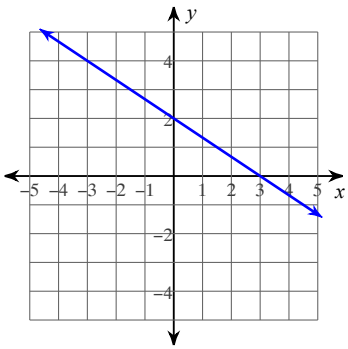


8.16b Write the slope-intercept form of the equation of each line given the slope and y-intercept.

88) Slope = $-\frac{5}{4}$, y-intercept = -4

89) Slope = -3, y-intercept = 3

90) Slope = $-\frac{8}{3}$, y-intercept = -3

91) Slope = 0, y-intercept = 5

92) Eight workers are hired to harvest strawberries from a field. Each is given a plot which is 6×11 meters in size. What is the total area of the field?

93) In eight years Molly will be 46 years old. How old is she now?

94) Jasmine spent half of her weekly allowance at the movies. To earn more money her parents let her wash the car for $4. What is her weekly allowance if she ended with $8?

95) Paul had some paper with which to make note cards. On his way to his room he found four more pieces to use. In his room he cut each piece of paper in half. When he was done he had 24 half-pieces of paper. With how many sheets of paper did he start?

96) Julio's Bikes rents bikes for $17 plus $3 per hour. Pranav paid $26 to rent a bike. For how many hours did he rent the bike?

97) Jennifer had some paper with which to make note cards. On her way to her room she found two more pieces to use. In her room she cut each piece of paper in half. When she was done she had 10 half-pieces of paper. With how many sheets of paper did she start?

8.17 - Answer each question and round your answer to the nearest whole number.

98) Shreya bought one package of basil for $3. How many packages of basil can Trevon buy if he has $21?

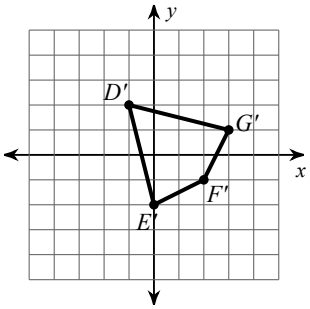
99) One papaya costs $3. How many papayas can you buy for $15?

100) The currency in Poland is the Zlotych. The exchange rate is approximately 3 Zlotych for every $1. At this rate, how many dollars would you get if you exchanged 18 Zlotych?

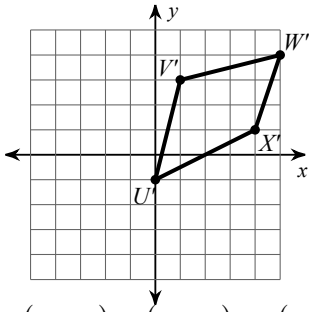
101) Pranav enlarged the size of a triangle to a height of 8 in. What is the new width if it was originally 3 in wide and 4 in tall?

Answers to Summer Math Packet - Part 1 (ID: 1)

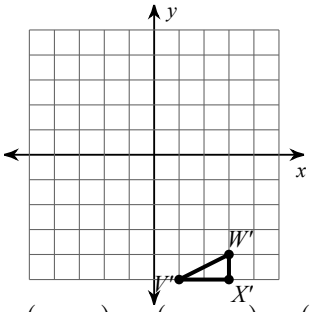
1)
2) [±2]
3) [±5]
4) 0
5) [±11]
6) [±1]
7) [±4]
8) [±10]
9) [± 8]
10) 9
11) [±12]
12) −6
13) [±3]
14) (13, −13)
15) [±7]
16) [~2.3, between 2 & 3]
17) [~11.8, between 11&12]
18) [~9.9, between 9&10]
19) [~10.1, between 10 &11]
20) [~6.8, between 6& 7]
21) [~7.9, between 7 & 8]
22) [~8.8, between 8 & 9]
23) [~10,9, between 10 & 11]
24)



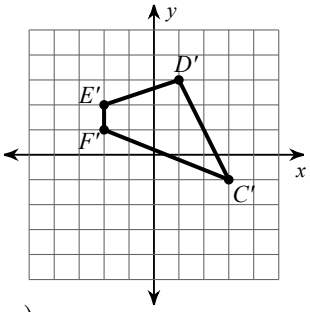
25)



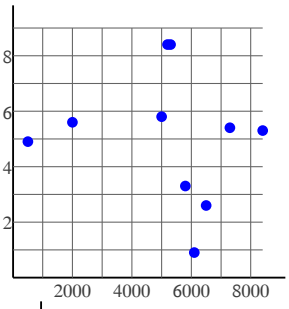
26)



27)

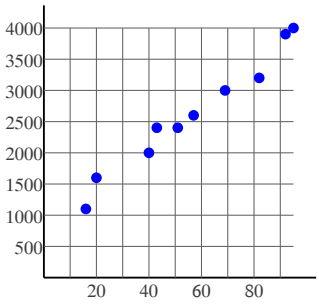


28) $I'(-3, 4), J'(-4, 0), H'(-2, 0)$
29) $J'(0, -4), K'(-2, -1), L'(2, 2), M'(4, -1)$
30) $U'(-5, 3), V'(-4, 3), W'(-4, 5), T'(-5, 5)$
31) $S'(-2, 2), R'(-3, 1), Q'(-5, -4), T'(-1, -1)$
32) 17
33) 1.4
34) 11
35) 14.4
36) 10.8
37) 4.6
38) 5.1
39) 10.7
40) 12.3
41) 7.5
42) 8.64 cm²
43) 39.6 mi²
44) 13.02 in²
45) 14.4 mi²
46) 13.2 km²
47) 39.6 ft²
48) 1.44 mi²
49) 36 km²
50)



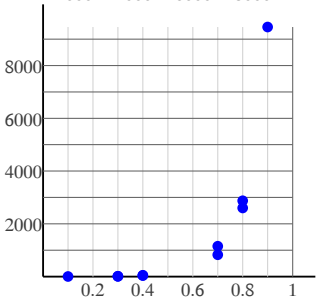
No correlation

51)

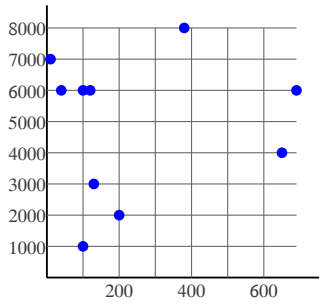


Positive correlation
Linear
$y = 33.012x + 754.81$

52)



Positive correlation
Nonlinear
$y = 7725.5x - 2469.4$

53) 

No correlation

54) 15

55) 1

56) 7

57) 7

58) $12\frac{9}{10}$

59) $7\frac{4}{5}$

60) $2\frac{1}{22}$

61) $4\frac{7}{8}$

62) -1

63) 3

64) 5

65) 11

66) 38

67) 14

68) -14

69) -9

70) $-5 + 8n$

71) $10x - 5$

72) $-5x - 9$

73) $-9b + 90$

74) $-81 - 81m$

75) $32 + 80n$

76) $\frac{21}{10}n - \frac{219}{70}$

77) $-\frac{23}{6}n$

78) $\frac{56}{9}n$

79) $-\frac{11}{9}x$

80) $\frac{3}{2}$

81) $-\frac{4}{5}$

82) $\frac{4}{3}$

83) -1

84) $\frac{1}{3}$

85) $\frac{3}{5}$

86) $y = 8x - 5$

87) $y = -\frac{2}{3}x + 2$

88) $y = -\frac{5}{4}x - 4$

89) $y = -3x + 3$

90) $y = -\frac{8}{3}x - 3$

91) $y = 5$

92) 528

93) 38

94) \$8

95) 8

96) 3

97) 3

98) 7

99) 5

100) \$6

101) 6 in