Liberal Arts Name_____

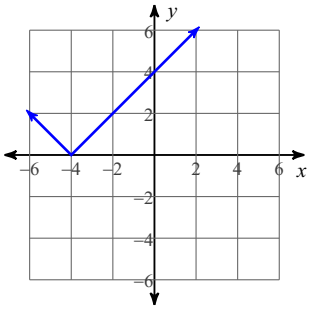
Summer Practice

Date_____

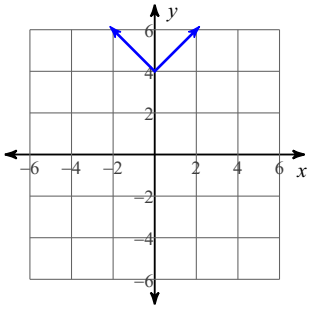
Graph each equation.

1) $y = |x| + 4$

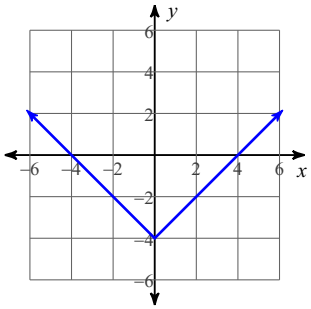
A)



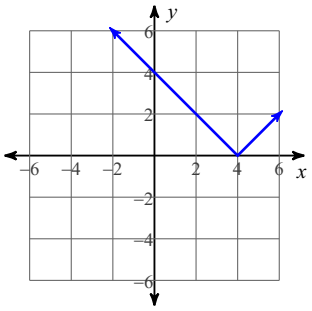
B)



C)

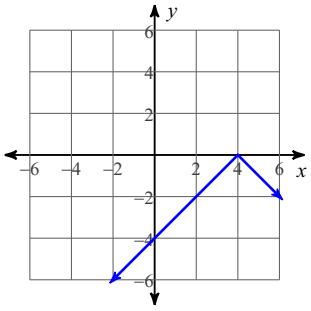


D)

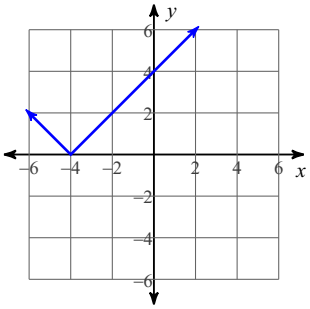


2) $y = |x| - 4$

A)



B)



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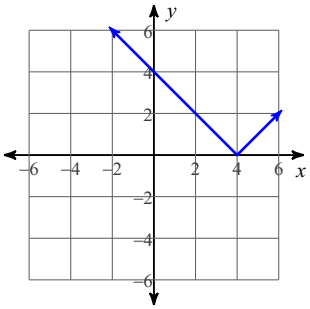
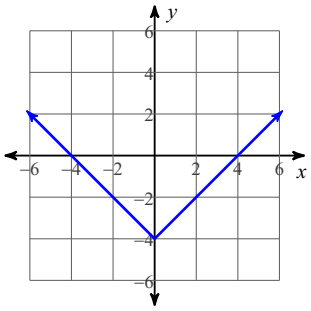


D)



Solve each equation.

3) $|x + 4| = 8$

A) $\{4, -12\}$ B) $\{2, -12\}$
C) $\{4\}$ D) $\{14, -4\}$

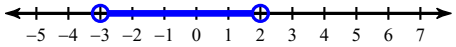
4) $|-3x| = 9$

A) $\{-3, 3\}$ B) $\{2, -2\}$
C) $\{2\}$ D) $\{-3\}$

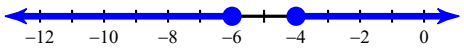
Solve each inequality and graph its solution.

5) $|2a| \leq 14$

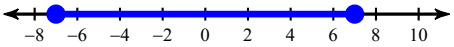
A) $-3 < a < 2$:



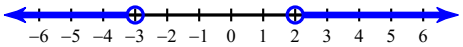
B) $a \leq -6$ or $a \geq -4$:



C) $-7 \leq a \leq 7$:

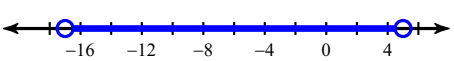


D) $a < -3$ or $a > 2$:

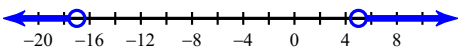


6) $|n + 6| < 11$

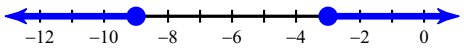
A) $-17 < n < 5$:



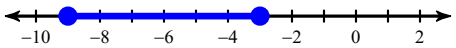
B) $n > 5$ or $n < -17$:



C) $n \geq -3$ or $n \leq -9$:

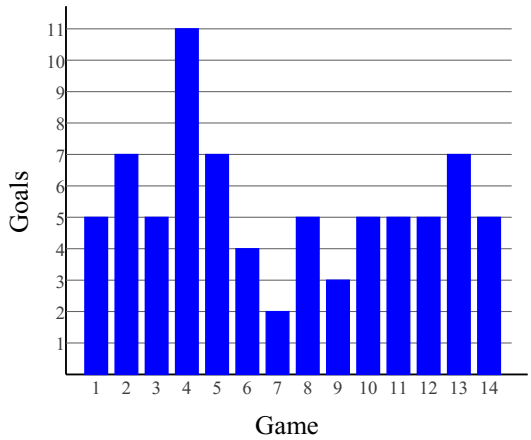


D) $-9 \leq n \leq -3$:



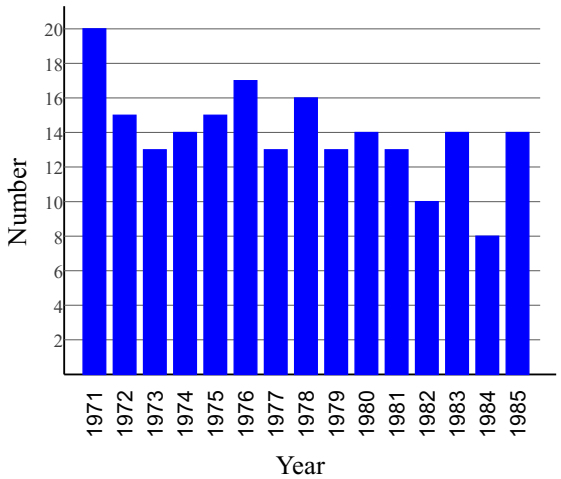
Find the median and mean for each data set.

7) Goals in a Hockey Game



A) Median = 5 and Mean = 5.43
B) Median = 5 and Mean = 5.29
C) Median = 5.5 and Mean = 5.64
D) Median = 5 and Mean = 5

8) 7.0+ Magnitude Earthquakes



A) Median = 14 and Mean = 13.93
B) Median = 13 and Mean = 12.73
C) Median = 13 and Mean = 12.27
D) Median = 13 and Mean = 11.93

Simplify each expression.

9) $-b - 9b$

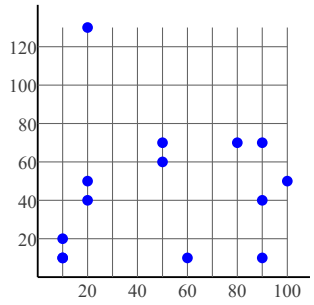
A) b B) $-10b$
C) $-6b$ D) $-8b$

10) $1 - 9x - 5x$

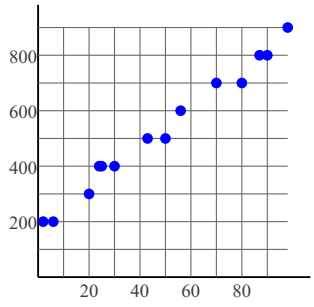
A) $1 - 21x$ B) $1 - 13x$
C) $1 - 20x$ D) $1 - 14x$

State if there appears to be a positive correlation, negative correlation, or no correlation.

11)



12)



Simplify each expression.

13) $-6 - 6n + 10$

A) $4 - 6n$ B) 9
C) $3n$ D) $9 - 4n$

14) $4x + 2 + x + 5$

A) $-9x + 7$ B) $-2x + 7$
C) $5x + 7$ D) $-5x + 7$

Simplify.

15) $\dfrac{\sqrt{2}}{\sqrt{3} - 2}$

A) $-\sqrt{6} - 2\sqrt{2}$
B) $\dfrac{4 - \sqrt{2}}{5}$
C) $\dfrac{1 - \sqrt{5}}{5}$
D) $\dfrac{-20 + 4\sqrt{2}}{23}$

16) $\dfrac{3\sqrt{5}}{-1 + \sqrt{2}}$

A) $\dfrac{10 - 4\sqrt{2}}{17}$
B) $\dfrac{-\sqrt{5} + \sqrt{10}}{15}$
C) $3\sqrt{5} + 3\sqrt{10}$
D) $\dfrac{-5 + \sqrt{3}}{5}$

Simplify each expression.

17) $\dfrac{7n^2 + 63n}{3} \div \dfrac{7n}{3}$

18) $\dfrac{7}{a + 7} \div \dfrac{2}{2a + 14}$

Find each quotient.

19) $\dfrac{-18}{6}$

20) $\dfrac{16}{4}$

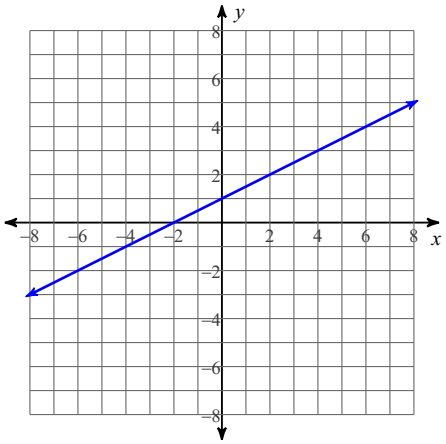
Simplify. Write each answer in scientific notation.

21) $\dfrac{7.7 \times 10^{3}}{3.3 \times 10^{-1}}$

22) $\dfrac{1.15 \times 10^{6}}{3.8 \times 10^{4}}$

Each graph represents a relation. Determine the domain and range.

23)



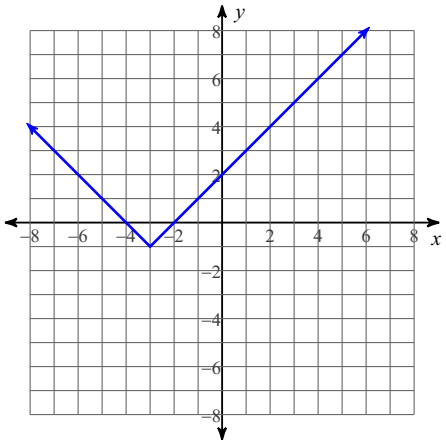
A) Domain: All real numbers
Range: All real numbers

B) Domain: All real numbers
Range: $y = -4$

C) Domain: All real numbers
Range: $y = 2$

D) Domain: All real numbers
Range: $y = 4$

24)



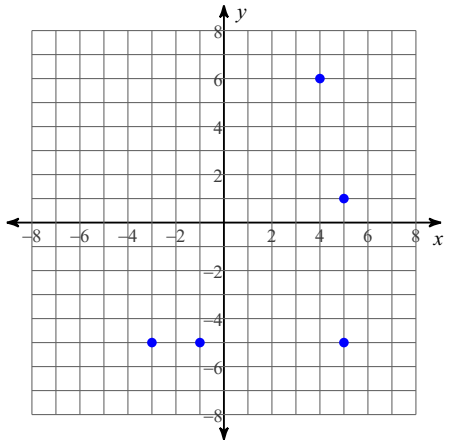
A) Domain: All real numbers
Range: $y \leq 1$

B) Domain: All real numbers
Range: $y \geq -1$

C) Domain: All real numbers
Range: $y \leq 2$

D) Domain: All real numbers
Range: $y \geq 0$

25)



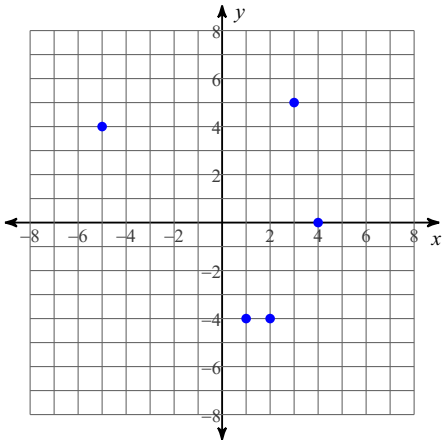
A) Domain: $\{-3, -1, 4, 5\}$
Range: $\{-5, 1, 6\}$

B) Domain: $\{-3, -2, -1, 0, 5\}$
Range: $\{-7, -5, 1\}$

C) Domain: $\{-4, -3, -1, 4, 5\}$
Range: $\{-5, 2, 7\}$

D) Domain: $\{0, 1, 4, 5\}$
Range: $\{-6, -5, 1, 4, 6\}$

26)



A) Domain: $\{1, 2, 3, 4\}$
Range: $\{-4, 0, 4, 5\}$

B) Domain: $\{-7, -5, 2, 3\}$
Range: $\{-4, -3, -2, 5, 6\}$

C) Domain: $\{-7, -5, -3, 0, 4\}$
Range: $\{-1, 0, 4, 5, 6\}$

D) Domain: $\{-5, 1, 2, 3, 4\}$
Range: $\{-4, 0, 4, 5\}$

Draw a dot plot for each data set.

27) Life Expectancy

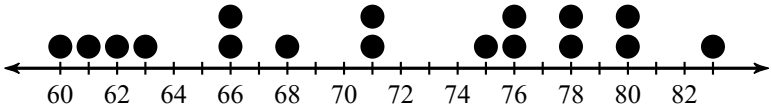
Country	Years
Jamaica	75
Cambodia	66
Libya	75
North Korea	69
Belize	77

Country	Years
Papua New Guinea	68
Namibia	67
Oman	76
Sudan	63

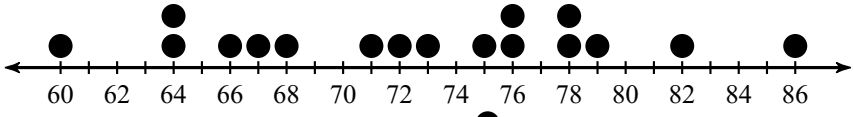
Country	Years
Afghanistan	60
Syria	75
Estonia	76
Madagascar	66

Country	Years
Chile	80
Cyprus	81
Bosnia & Herzegovina	76
Georgia	75

A)

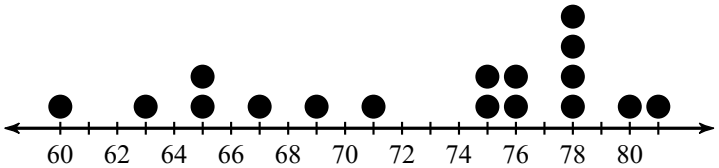


B)



C)

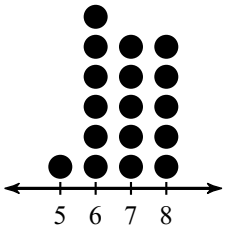
D)



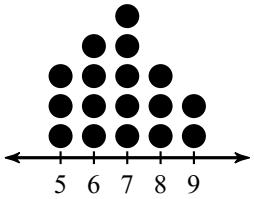
28) Hours Slept

6	6	7	7	9	6	6	7
7	7	8	8	7	8	7	9
5							

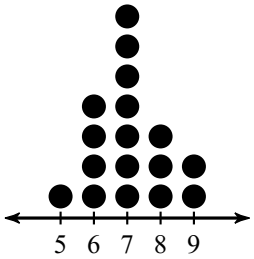
A)



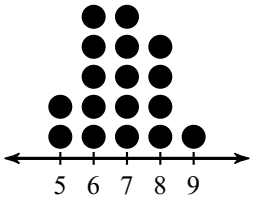
B)



C)



D)



Solve each equation.

29) $|n + 5| = 10$

A) $\{8, -8\}$ B) $\{5, -15\}$
C) $\{6\}$ D) $\{6, 0\}$

30) $|-6n| = 54$

A) $\{-9, 9\}$ B) $\{8, -8\}$
C) $\{36, -36\}$ D) $\{8\}$

Solve each equation for the indicated variable.

31) $a - c = r - d$, for a

A) $a = -c + r + d$
B) $a = c - r + d$
C) $a = r + d + c$
D) $a = c + r - d$

32) $u = \frac{k}{xy}$, for x

A) $x = \frac{k}{uy}$ B) $x = -\frac{uy}{k}$
C) $x = kuy$ D) $x = \frac{uy}{k}$

Solve each equation.

33) $-82 = -2(1 + 8x)$

A) $\{5\}$ B) $\{15\}$
C) No solution. D) $\{-15\}$

34) $-7(1 + 8a) = -119$

A) No solution. B) $\{4\}$
C) $\{15\}$ D) $\{2\}$

35) $-13 = \frac{x}{2}$

A) $\{-11\}$ B) $\left\{-\frac{13}{2}\right\}$
C) $\{-26\}$ D) $\{-15\}$

36) $\frac{p}{8} = -4$

A) $\{-12\}$ B) $\left\{-\frac{1}{2}\right\}$
C) $\{-32\}$ D) $\{4\}$

Solve each proportion.

37) $\frac{8}{9} = \frac{3}{n}$

A) $\{3.38\}$ B) $\{8.27\}$
C) $\{2.3\}$ D) $\{4.4\}$

38) $\frac{4}{7} = \frac{9}{x}$

A) $\{4.4\}$ B) $\{3.9\}$
C) $\{8.4\}$ D) $\{15.75\}$

Solve each equation by factoring.

39) $p^2 = 2 - p$

A) $\{-2, -6\}$ B) $\{6\}$
C) $\{-2, 1\}$ D) $\{-1, 7\}$

40) $n^2 = 6n - 8$

A) $\{8, 0\}$ B) $\{-8, 4\}$
C) $\{4, 0\}$ D) $\{4, 2\}$

Evaluate each using the values given.

41) $b + c \div 4$; use $b = 5$, and $c = 4$

A) 9 B) 4
C) 7 D) 6

42) $1 + rq$; use $q = 4$, and $r = 4$

A) 21 B) 17
C) 20 D) 19

Simplify. Your answer should contain only positive exponents.

43) $4m^3n^{-2} \cdot 3n^4$

A) $\frac{8}{m^3}$ B) $12m^3n^2$
C) $\frac{8}{n^2}$ D) $\frac{n^3}{m^2}$

44) $2x^2 \cdot 2x^4y^{-2}$

A) $16y^5x^2$ B) $\frac{16x^6}{y}$
C) $\frac{3y^3}{x^4}$ D) $\frac{4x^6}{y^2}$

Factor each completely.

45) $16r^3 + 24r^2 - 6r - 9$

A) $(8r^2 + 3)(2r + 3)$
B) $(2r - 3)(8r^2 - 3)$
C) $(8r^2 - 3)(2r + 3)$
D) $(2r - 3)(8r^2 + 3)$

46) $35x^3 - 40x^2 + 42x - 48$

A) $(5x^2 + 6)(7x + 8)$
B) $(5x^2 - 8)(7x + 6)$
C) $(5x^2 + 6)(5x^2 + 8)$
D) $(5x^2 + 6)(7x - 8)$

47) $9n^2 + 30n + 25$

A) $(9n + 25)^2$
B) $(3n + 5)^2$
C) $(3n + 2)(3n - 2)$
D) Not factorable

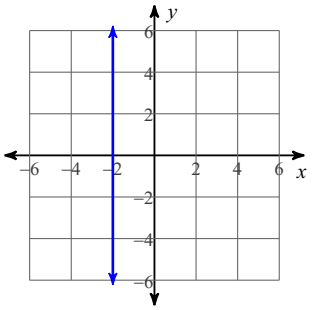
48) $9n^2 + 6n + 1$

A) $(3n + 2)^2$
B) $(-3n + 1)(3n + 1)$
C) $(3n - 1)(3n + 1)$
D) $(3n + 1)^2$

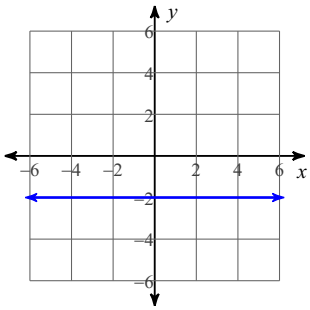
Sketch the graph of each line.

49) $y = 2$

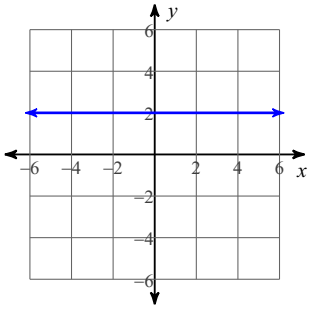
A)



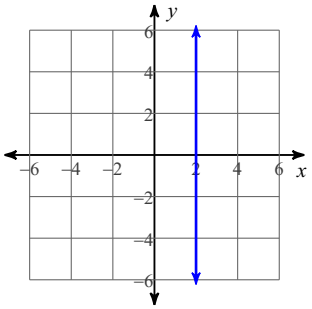
B)



C)

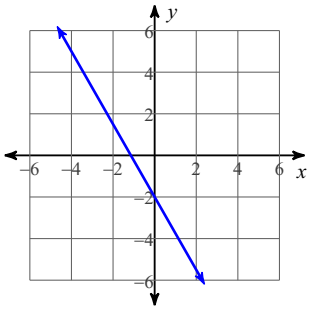


D)

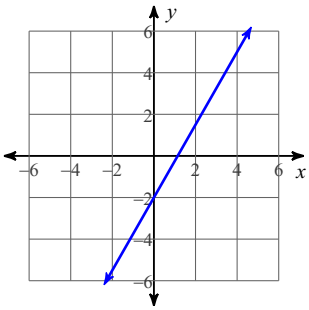


50) $7x + 4y = -8$

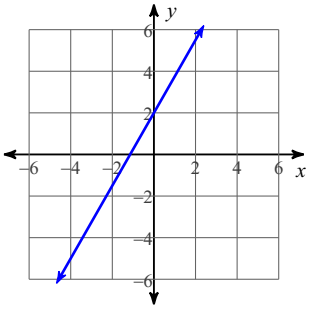
A)



B)



C)



D)