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Name

1. Which of the following data sets is linear?

a.

x	4	6	8	10
y	0	4	8	12

b.

x	2	4	6	8
y	0.15	0.32	0.49	0.67

2. What does it mean to say that a relation is "linear"?

3. What is the equation of the graph that fits through the following data:
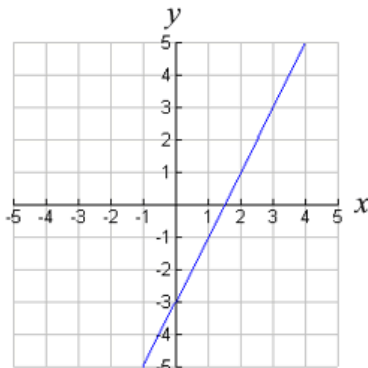
x	-12	-6	0	6
y	5	3	1	-1

4. What is the equation of the line that fits through the following data?

x	-4	-2	0	2	4	6	8
y	-6	-2	2	6	10	14	18

5. What is the equation of the line that fits through the following data?

| x	-1	1	3	5	7	9	11
y	8	4	0	-4	-8	-12	-16

6. Write the equation of the line graphed below.

7. (a) write the equation that is represented by the graph
   (b) Is the volume increasing or decreasing with time?
   (c) What does the slope of the graph represent physically?
   (d) What are the "units" of the x and y axes?
   (e) What quantity is represented by the x and y axes?
   (f) Using your equation, determine what the volume will be at t=20.
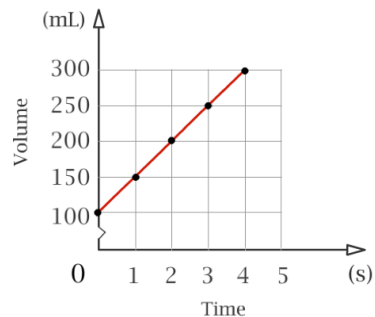
8. (a) Write the equation that gives a "best fit" line through the data (it has been drawn through the data). Assume it passes through the points (50, 33) and (82, 18)

(b) Does the mean (average) reading score have a linear correlation with class size?

(c) Is this correlation negative or positive (this describes the slope)?
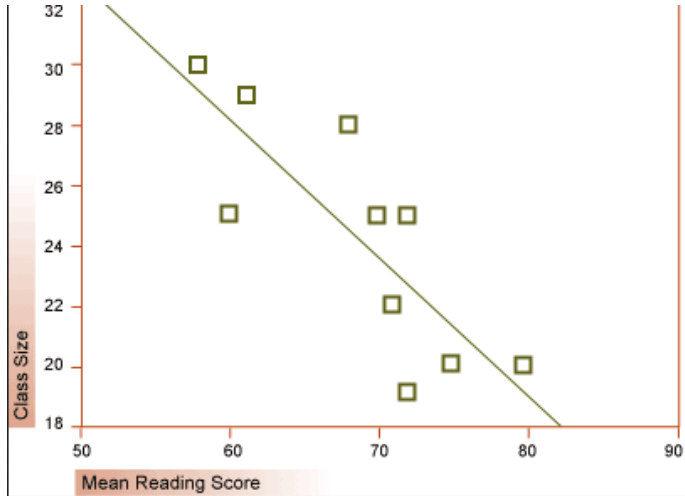
9. (a) Write the equation for the relation below.

(b) What type of correlation exists between air temperature and altitude (positive, negative, or none)?

(c) Mount Everest rises 8,848 meters (29,029 ft) above sea level. Using your equation, determine the air temperature in degrees Celsius at the peak.