

## DATA & STATISTICS SELF-ASSESSMENT - ANSWERS

(1) For the following set of numbers, give the mean, median, mode, and range. Also, draw a box & whiskers plot for the data:

40, 19, 42, 47, 52, 54, 42, 51, 44, 53

Write the numbers in ascending numerical order:

19, 40, 42, 42, 44,  $\uparrow$  47, 51, 52, 53, 54

mode      median

mean = **44.4**

median =  $(44 + 47) / 2 = \mathbf{45.5}$

mode = **42**

range =  $54 - 19 = \mathbf{35}$



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(2) Find the probability:

(a) Flip a fair coin. What is the probability of getting heads?  **$1/2$**

(b) Flip two fair coins. What is the probability of getting two heads?  **$1/4$**

(c) Shake a fair, 6-sided die. What is the probability of getting a five?  **$1/6$**

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(3) Jolene has 6 shirts, 4 pants, and 2 pairs of shoes. How many unique outfits could she create of one shirt, one pants, and one pair of shoes?

$$6 \times 4 \times 2 = \mathbf{48}$$

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(4) Give the next two numbers in each sequence:

(a) 14, 17, 20, 23, 26, 29, ... (+ 3)

(b) 3, 6, 12, 24, 48, 96, ... ( $\times 2$ )

(c) 1, 1, 2, 3, 5, 8, 13, 21, 34, ...  
(Fibonacci sequence – add two previous terms)

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(5) A certain parking lot charges 75-cents for each hour a car is parked. Any portion of an hour is charged for a full hour. How long can Jolene park for \$5.00?

$$.75) 5.00 \rightarrow 75.) 500. = 6.6 \text{ hr}$$

However, because each partial hour is charged full 75-cents, the most hours Jolene can park for \$5.00 is **6 hours**.

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(6) Mark the ruler at  $1 \frac{5}{8}$  inches:

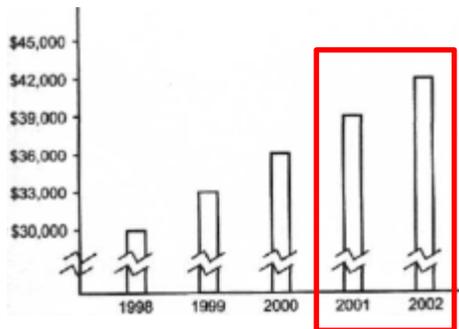


What download speed is shown on the gauge below? Answers will vary: **32-34 Megabits/sec**



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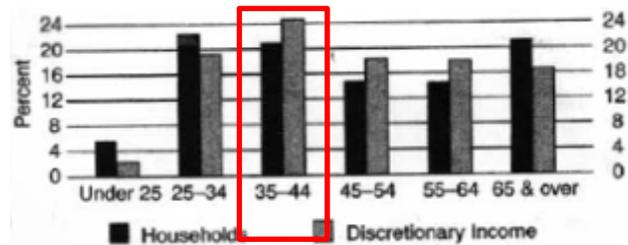
(7) Find the average of those years with mean incomes over \$36,000.



$$(39,000 + 42,000) / 2 = \$40,500$$

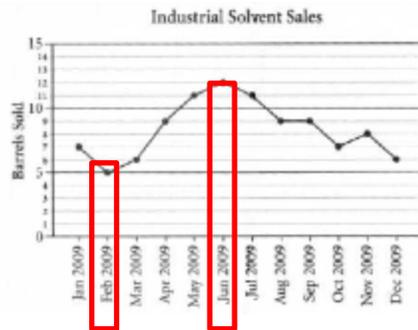
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(8) Which age group has the most discretionary income?



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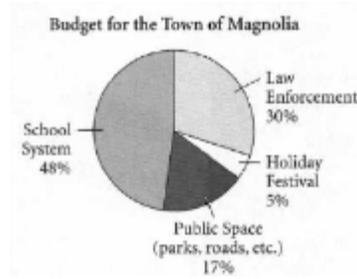
**(9)** In which month were the most barrels sold? In which month were the least barrels sold?



Least    Greatest

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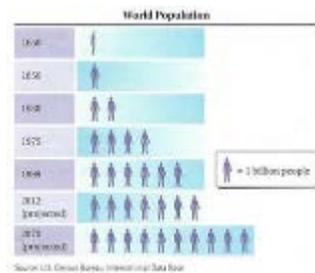
**(10)** What percent of the total budget is spent on the school system and law enforcement combined?



$48\% + 30\% = 78\%$

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**(11)** What was the world population in 1650? What happened to the world population from 1930 to 1975?



Half a person in 1650 represents **1/2 billion**.

Between 1930 to 1975, the world population went from 2 billion to 4 billion – so the world population **doubled**.

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**(12)** On the average, how many earthquakes per year do we have that measure from 6.0 to 8.9?

Earthquakes Worldwide per Year

Magnitude	EQ/year
8.5 – 8.9	0.3
8.0 – 8.4	1.1
7.5 – 7.9	3.1
7.0 – 7.4	15
6.5 – 6.9	56
6.0 – 6.4	210

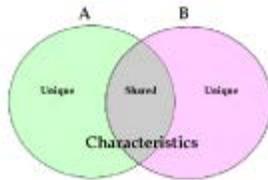
$0.3 + 1.1 + 3.1 + 15 + 56 + 210 = 285.5$

However, because there is no such thing as half an earthquake, the answer is **285** (or 286 is OK).

Be careful with that word “average” in the problem, don’t divide by 6. We want a total number of earthquakes.

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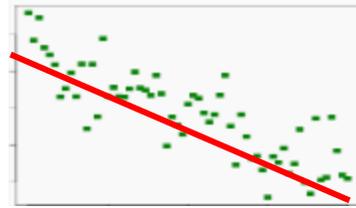
(13) Circle A represents those who are married. Circle B represents those who are female. What can you say about the overlapping area of the green and pink circles?



The overlapping area represents **married females**.

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(14) Draw a line of best fit on this scatterplot:



A line of best fit is drawn so the same amount of points are above the line as there are below the line.

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(15) List all the numbers in the stem & leaf plot below that are even numbers:

tens	ones
0	1 5 8 8
1	3 6 6 6 7
2	
3	1 2 5

**8, 8, 16, 16, 16, 32**

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(16) Using the flow chart below,

(a) What happens when  $X = 16$ ?

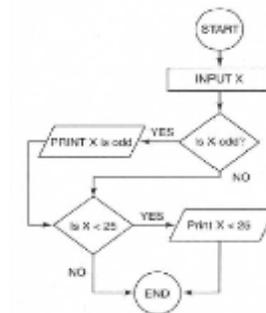
Printout reads " **$16 < 25$** "

(b) What happens when  $X = 19$ ?

Printout reads "**19 is odd  $19 < 25$** "

(c) What happens when  $X = 27$ ?

Printout reads "**27 is odd**"



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**(17)** What is the average frequency shown in the frequency table below?

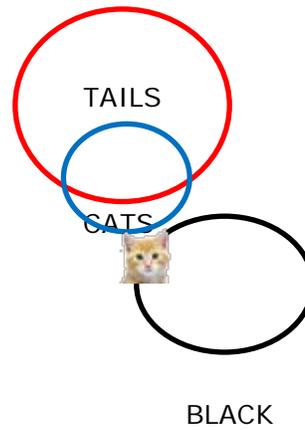
Number	Frequency
3	4
4	8
6	2
7	4
8	2

$$(4 + 8 + 2 + 4 + 2) / 5 = 4$$

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**(18)** Draw a logic diagram to represent the following statements:

- (a) ALL cats have tails.
- (b) SOME cats are black.
- (c) Goldy is a cat.



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