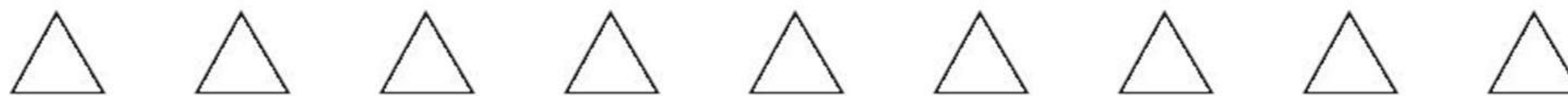


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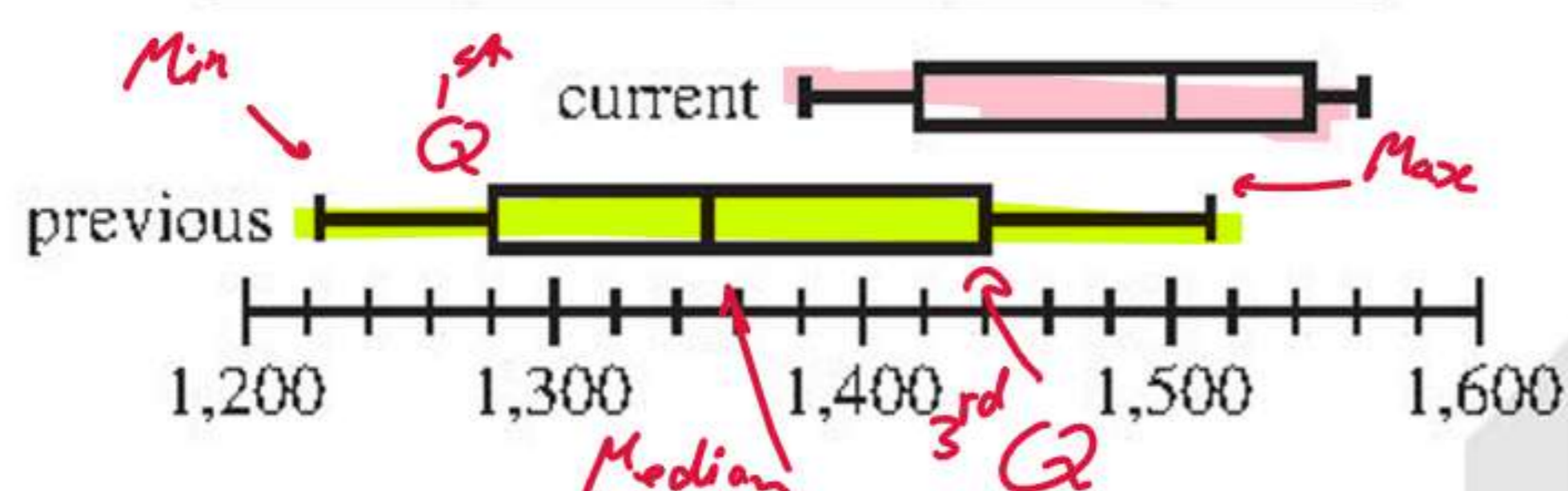
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DO YOUR FIGURING HERE.

Use the following information to answer questions 50–52.

The table below gives the average daily attendance for each grade level at JFK High School for 4 months of the current school year. The boxplots below show the distribution of JFK's total daily attendance figures for the previous school year (180 days) and for half of the current school year (90 days).

Grade	Month			
	Sept.	Oct.	Nov.	Dec.
9th	267	295	310	244
10th	425	414	395	341
11th	382	398	395	389
12th	441	384	414	407



Range = Max - Min
IQR = Q₃ - Q₁

50. Considering only the attendance for the months given in the table, which grade level, if any, has the **strongest negative linear correlation** between the number of months into the current school year and the average daily attendance for the month?

- F. 9th
- G. 10th**
- H. 11th
- J. 12th
- K. No grade level has a negative correlation.

51. The number of school days at JFK High School in each of the 4 months is given below.

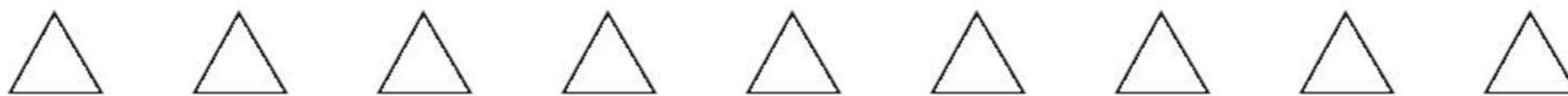
Month	School days
September	20
October	20
November	18
December	15

$\frac{\text{Sum}}{\text{no.}} = \frac{\text{days}}{\text{days}}$
 $\frac{20+20+18+15}{4}$

Using the attendance numbers in the table, which of the following expressions gives the average **daily** attendance for the 9th grade for this 4-month period?

- A. $\frac{267 + 295 + 310 + 244}{4}$
- B. $\frac{20(267 + 295) + 18(310) + 15(244)}{20 + 18 + 15}$
- C. $\frac{20(267 + 295) + 18(310) + 15(244)}{4(20 + 18 + 15)}$
- D. $\frac{20(267 + 295) + 18(310) + 15(244)}{20(2) + 18 + 15}$**
- E. $\frac{20(267) + 20(295) + 18(310) + 15(244)}{4}$

2



2

52. One of the following statistics is **greater** for the data from the **previous** school year **than** for the data from the **current** school year. Which one?

DO YOUR FIGURING HERE.

- E. 1st quartile
- G. 3rd quartile
- H. Median
- J. Maximum
- K. Variance**

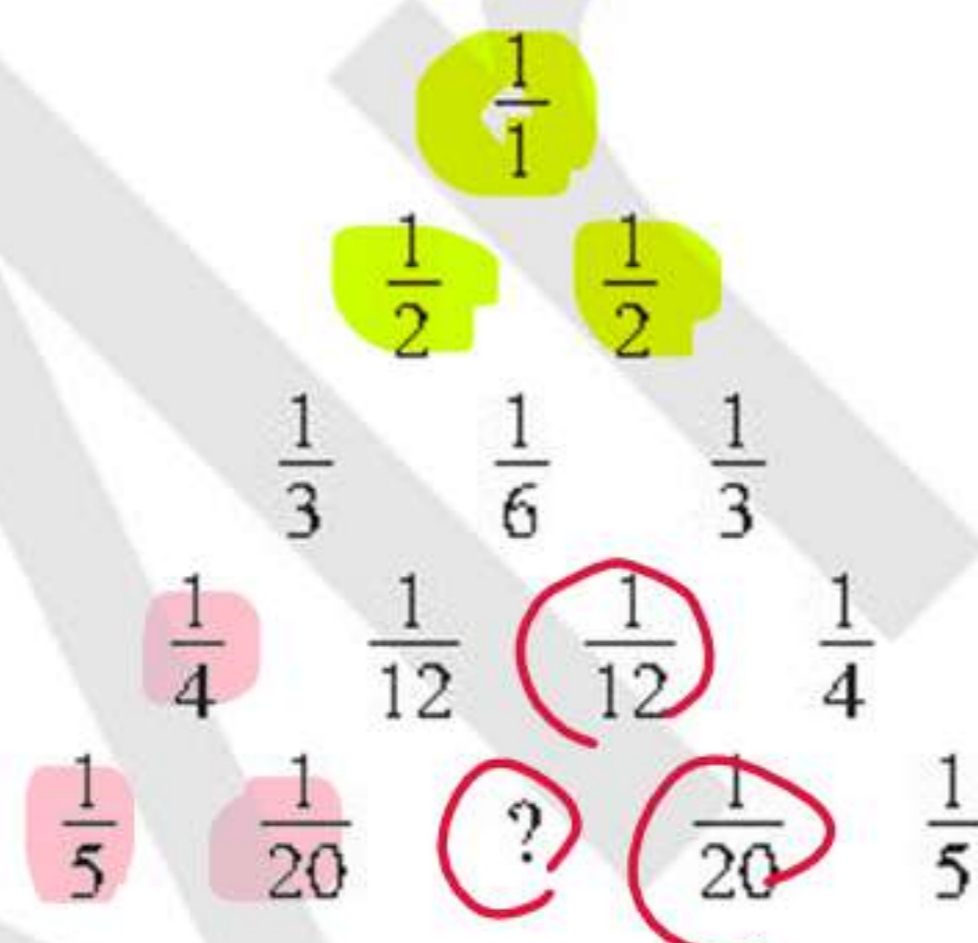
53. If $-2 \leq x \leq 4$ and $-1 \leq y \leq 5$, what is the **maximum** value of $|x - y|$?

- A. 9
- B. 7**
- C. 6
- D. 5
- E. 4



$$\begin{aligned}
 &|x - y| \\
 &|-2 - (-1)| = 1 \\
 &|-2 - 5| = \mathbf{7} \\
 &|4 - (-1)| = 5 \\
 &|4 - 5| = 1
 \end{aligned}$$

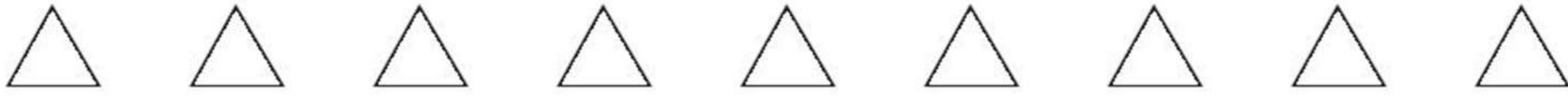
54. In the triangular arrangement of fractions below, the first and last fraction in row n is $\frac{1}{n}$. Any other **entry** is the **sum** of the 2 **fractions** on either side of that entry in the **row** directly **beneath** it. What is the 3rd fraction in the 5th row?



- E. $\frac{1}{4}$
- G. $\frac{1}{15}$
- H. $\frac{1}{25}$
- J. $\frac{1}{30}$**
- K. $\frac{1}{100}$

$$\begin{aligned}
 \frac{1}{12} &= ? + \frac{1}{20} \\
 \frac{1}{12} - \frac{1}{20} &=
 \end{aligned}$$

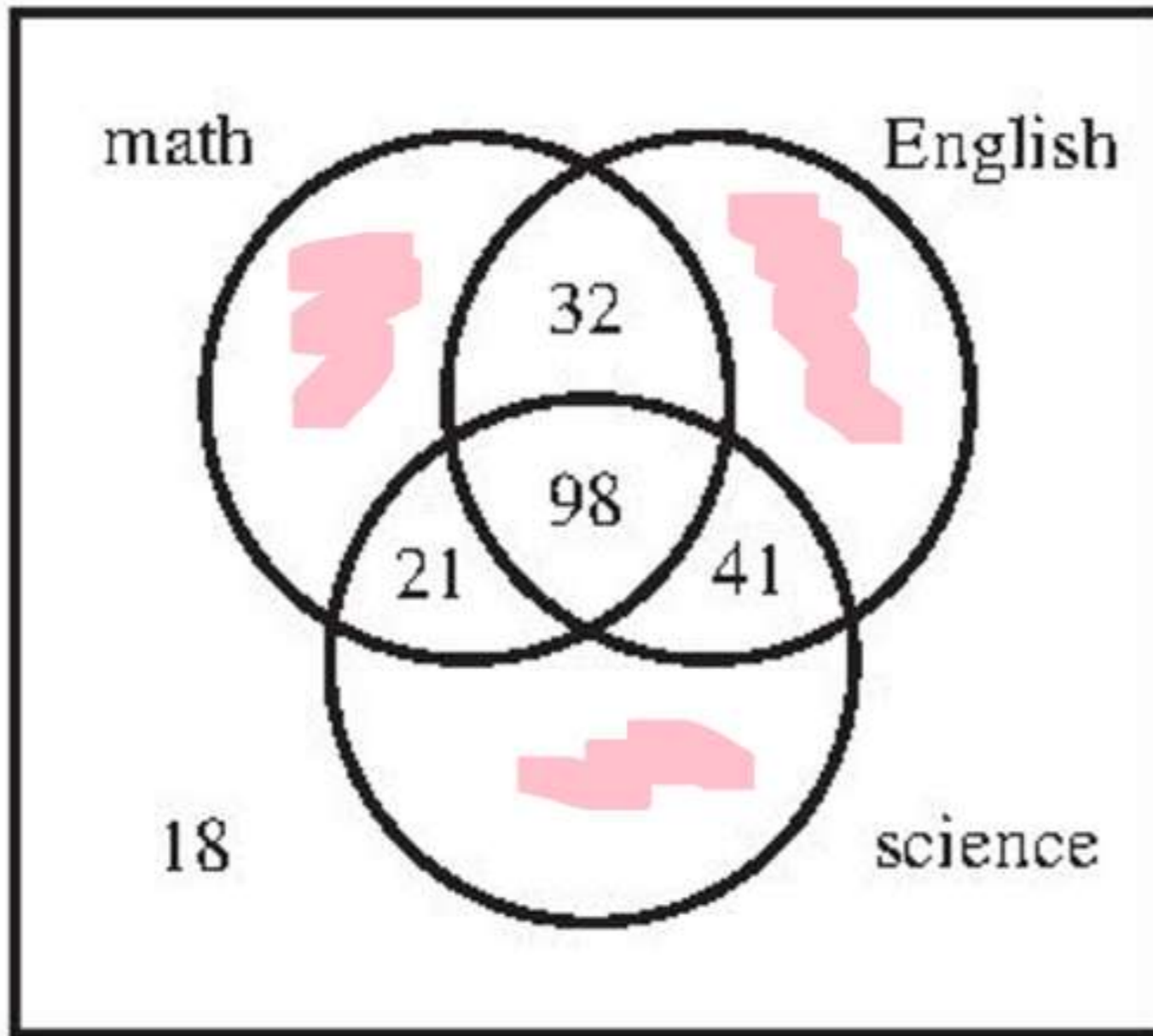
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2

55. Of the 300 juniors at Northeast High School, 130 are taking both math and English, 139 are taking both science and English, 119 are taking both math and science, and 98 are taking all 3 courses. Only 18 students are taking none of the 3 courses. The data are shown in the Venn diagram below.

DO YOUR FIGURING HERE.



$$300 - (32 + 98 + 21) + 41 + 18 = 90$$

One of the juniors from Northeast High School will be chosen at random. What is the probability that the chosen student is taking exactly 1 of these 3 courses?

- A. 0.30
- B. 0.33
- C. 0.36
- D. 0.64
- E. 0.67

$$\text{Prob.} = \frac{\text{Part}}{\text{Total}} = \frac{90}{300} = 0.30$$

Love you
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from - Malooka

56. What is the value of x in the equation $\log_3 54 - \log_3 2 = \log_2 x$?

- E. 3
- G. 8
- H. 9
- J. 52
- K. 108

slit + solve

$$3 = \log_3 54 - \log_3 2 = \log_3 \left(\frac{54}{2}\right) = \log_3 27$$

$$3 = \log_2 x \implies 2^3 = x \implies 8 = x$$

57. The rational equation $\frac{y(y+1)}{(y-4)(y+1)} + \frac{2(y-4)}{y+1} = \frac{y-5}{y^2-3y-4}$ has the same solution set as which of the following equations?

- A. $y(y+1) + 2(y-4) = y-5$
- B. $y(y+1) + 2(y-4) = y^2 - 3y - 4$
- C. $y(y+1) + 2(y-4) = (y-5)(y^2 - 3y - 4)$
- D. $y(y-4) + 2(y+1) = (y-5)(y^2 - 3y - 4)$
- E. $(y+2)(y^2 - 3y - 4) = (y-5)(y-4)(y+1)$

58. For what positive value of k will the expression $9x^2 + kx + 25$ factor into the form $(ax + b)^2$ for some real number a and some real number b ?

- E. 30
- G. 16
- H. 15
- J. 8
- K. 2

$$(3x + 5)^2 = 9x^2 + 30x + 25$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$(a-b)^2 = a^2 - 2ab + b^2$$

$$a^2 - b^2 = (a-b)(a+b)$$