


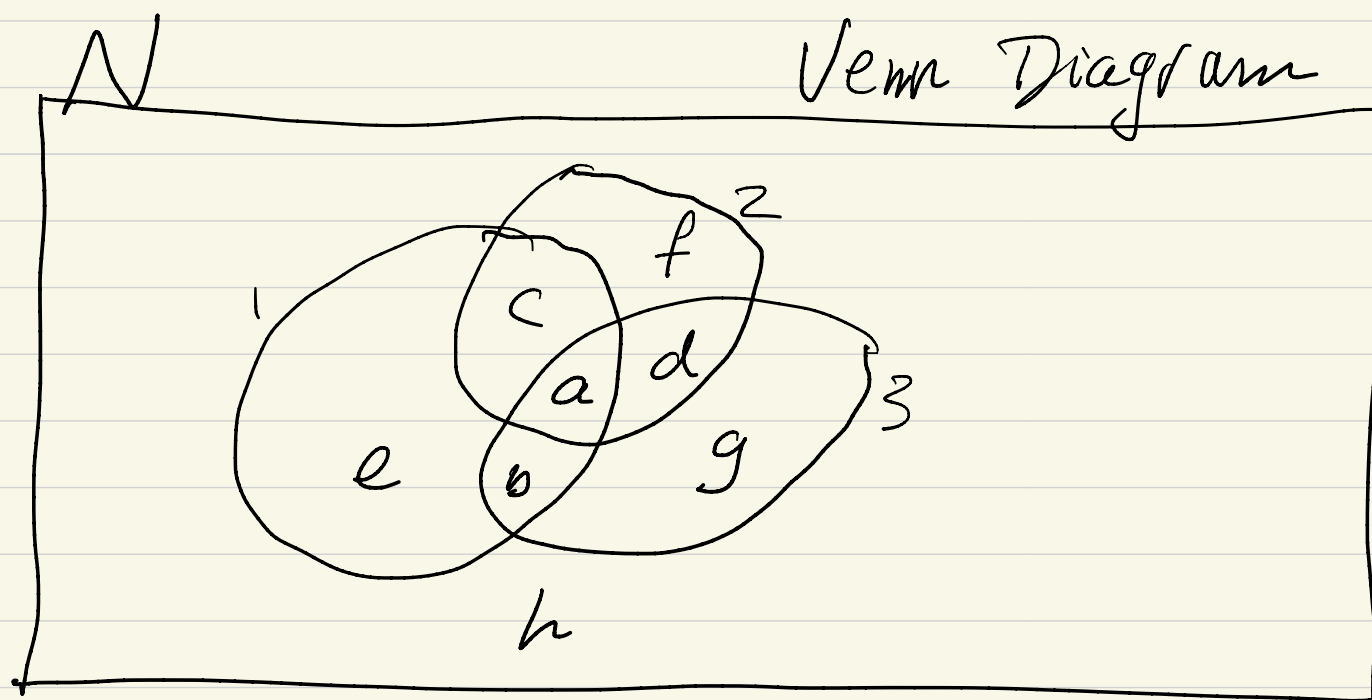
Math with Sean

2020-05-09

Arthur Ryman



2013 Question 24 Pascal Contest



N = number of students at Pascal High School

$$N = a + b + c + d + e + f + g + h$$

$$T_1 = e + a + b + c = N/2 = \frac{5N}{10}$$

$$T_2 = f + d + c + a = \frac{N}{100} \times 80 = \frac{4N}{5} = \frac{8N}{10}$$

$$T_3 = g + a + b + d = \frac{9N}{10}$$

$$All\ 3 = a = 160$$

$$Exactly\ 2 = c + b + d = N - 160$$

$$e = 0 = g = f = h$$

$$N = a + b + c + d + e + f + g + h$$

$$T_1 = e + a + b + c = N/2 = \frac{5N}{10}$$

$$T_2 = f + d + c + a = \frac{N}{100} \times 80 = \frac{4N}{5} = \frac{8N}{10}$$

$$T_3 = g + a + b + d = \frac{9N}{10}$$

$$All\ 3 = a = 160$$

$$Exactly\ 2 = c + b + d = N - 160$$

$$e = 0 = g = f = h$$

$$N = a + b + c + d = 160 + b + c + d$$

$$T_1 = a + b + c = \frac{5}{10} N$$

$$T_2 = a + c + d = \frac{8}{10} N$$

$$T_3 = a + b + d = \frac{9}{10} N$$

$$3a + 2b + 2c + 2d = \frac{5+8+9}{10} N$$

$$480 + 2(b + c + d) = \frac{22}{10} N$$

$$\underline{b + c + d = N - 160}$$

$$480 + 2(N - 160) = \frac{22}{10} N$$

$$480 + 2N - 320 = \frac{22}{10} N$$

$$480 + 2(N - 160) = \frac{22}{10}N$$

$$480 + 2N - 320 = \frac{22}{10}N$$

$$160 = \frac{22N}{10} - 2N$$

$$= \frac{22N - 20N}{10}$$

$$= \frac{2N}{10}$$

$$= \frac{N}{5}$$

$$5 \times 160 = N$$

$$800 = N$$

