

Attendance Quiz # 1 for Dr. Z.'s MathHistory for Lecture 1 (due no later than 10 minutes after class)

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Email to DrZlinear@gmail.com right after class

Subject: p1

with an attachment p1FirstLast.pdf

**Part I:** List all the "attendance questions" during the lecture, followed by your answers.

**Part II:**

1. (a) Use the **greedy algorithm** to express  $\frac{7}{12}$  as an Egyptian fraction. Use this to equally divide 7 pizzas among 12 people.

$$\begin{aligned}\frac{7}{12} &= \frac{1}{2} + \text{ref}\left[\frac{1}{12}\right] \\ &= \frac{1}{2} + \frac{1}{12} \\ &= \frac{1}{4} + \frac{1}{4} + \frac{1}{12} \\ &= \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{12} \\ &= \frac{1}{16} + \frac{1}{16} + \frac{1}{12} + \frac{1}{8} + \frac{1}{8}\end{aligned}$$

(b) Note that a better way to express  $\frac{7}{12}$  as an Egyptian fraction is

$$\frac{7}{12} = \frac{1}{3} + \frac{1}{4} .$$

Use this better way to equally divide 7 pizzas among 12 people. Why is it better?

$$\begin{aligned}\frac{7}{12} &= \frac{1}{6} + \frac{1}{6} + \frac{1}{8} + \frac{1}{8} \\ \frac{7}{12} &= \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{16} + \frac{1}{16} + \frac{1}{8}\end{aligned}$$

2. Find the two smallest positive integers  $n$ , that have the property that

• If you divide  $n$  by 3 you get remainder 1 .

• If you divide  $n$  by 5 you get remainder 2 .

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$$7/3 = 2R1$$

$$7/5 = 1R2$$

1) Who is the greatest Mathematician?

Euler

2) What university did Dennis Deturk graduate from?

Drexler

3) What university did RSA get a PhD from?

Weizmann Institute.