

Fractions (Junior UKMT)

These questions must be attempted without a calculator

Topics covered in the questions below may not necessarily be from the topic of the title.

1. Which of the following has the biggest value?

- A $\frac{1}{2}$ of 24 B $\frac{1}{3}$ of 36 C $\frac{1}{4}$ of 60 D $\frac{1}{5}$ of 50 E $\frac{1}{6}$ of 84

2. Which fraction is the biggest?

A $\frac{1+2}{2+3}$

B $\frac{2+4}{2+3}$

C $\frac{1+2}{4+6}$

D $\frac{1+4}{1+3}$

E $\frac{3+4}{2+4}$

3. The White Rabbit has an appointment to see the Red Queen at 4pm every day apart from weekends. On Monday, he arrives 16 minutes late. Each day after that he hurries more and more and so manages to halve the amount of time that he arrives late each day.

On what day of the week does he arrive just 15 seconds late?

- A Monday B Tuesday C Wednesday D Thursday E Friday

4. Which of these fractions does **not** simplify to $\frac{1}{4}$?

A $\frac{3942}{15768}$

B $\frac{4392}{17568}$

C $\frac{5796}{23184}$

D $\frac{6957}{31248}$

E $\frac{7956}{31824}$

5. Which is the smallest of these fractions?

A $\frac{5}{8}$

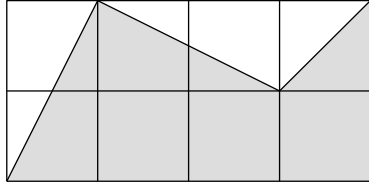
B $\frac{6}{13}$

C $\frac{7}{12}$

D $\frac{9}{17}$

E $\frac{10}{19}$

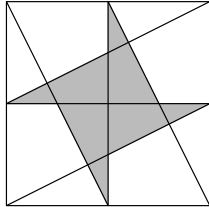
6. What fraction of the large rectangle is shaded?



- A $\frac{11}{16}$ B $\frac{9}{16}$ C $\frac{5}{8}$ D $\frac{3}{4}$ E $\frac{2}{3}$

7. In the diagram, a corner of the shaded star is at the midpoint of each side of the large square.

What fraction of the large square is covered by the star?



- A $\frac{1}{5}$ B $\frac{1}{4}$ C $\frac{1}{3}$ D $\frac{3}{8}$ E $\frac{2}{5}$

8. Which of these fractions is nearest to 1?

- A $\frac{12}{23}$ B $\frac{23}{34}$ C $\frac{34}{45}$ D $\frac{45}{56}$ E $\frac{56}{67}$

9. What is the value of $\frac{4}{1 - \frac{3}{4}}$?

- A $\frac{1}{16}$ B $\frac{1}{4}$ C 1 D 4 E 16

10. Using all of the digits from 1 to 9 inclusive, Shahb wrote down a fraction which had four digits in the numerator and five digits in the denominator. He then noticed that the fraction simplified to give exactly one half.

Which of the following could have been the numerator of Shahb's fraction?

- A 5314 B 6729 C 7341 D 7629 E 8359