



MATHS

BOOKS - HT Olympiad Previous Year Paper

FRACTIONS

Mathematical Reasoning

1. The models are shaded to show which of the following?

Model-1

$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
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Model-2

$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
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A. $\frac{1}{3} = \frac{2}{4}$

B. $\frac{1}{4} > \frac{1}{3}$

C. $\frac{2}{3} < \frac{2}{4}$

D. $\frac{2}{4} < \frac{2}{3}$

Answer: D



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2. The sum of two fractions is $\frac{3}{5}$ If one of the fractions is $\frac{7}{12}$ then find the difference of two fractions.

A. $\frac{17}{30}$

B. $\frac{33}{60}$

C. $\frac{15}{17}$

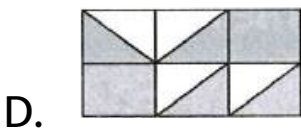
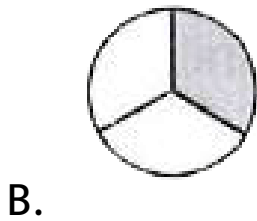
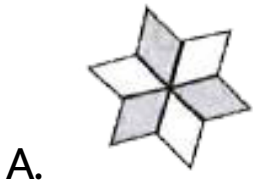
D. $\frac{5}{12}$

Answer: A



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3. In which of the following figures does the unshaded portion represents $\frac{2}{3}$?



Answer: B



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4. A pasta recipe requires $2\frac{2}{3}kg$ cheese.

Approximately, how much pasta can be made from a 21 kg cheese ?

A. $7\frac{7}{8}$

B. $7\frac{4}{8}$

C. $6\frac{7}{8}$

D. $6\frac{4}{8}$

Answer: A



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5. Which number should come in place of * ?

$$\frac{*}{4} + \frac{1}{6} + \frac{5}{12} = 1\frac{1}{3}$$

A. 5

B. 7

C. 3

D. 1

Answer: C



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6. Which of the following is arranged in ascending order ?

$$\frac{5}{14}, \frac{4}{7}, \frac{3}{8}, \frac{1}{16}, \frac{1}{4}$$

A. $\frac{5}{14}, \frac{4}{7}, \frac{3}{8}, \frac{1}{16}, \frac{1}{4}$

B. $\frac{4}{7}, \frac{5}{14}, \frac{1}{16}, \frac{1}{4}, \frac{3}{8}$

C. $\frac{1}{16}, \frac{1}{4}, \frac{5}{14}, \frac{3}{8}, \frac{4}{7}$

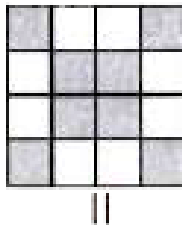
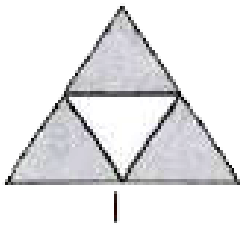
D. $\frac{5}{14}, \frac{1}{16}, \frac{4}{7}, \frac{1}{4}, \frac{3}{8}$

Answer: C



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7. What is the sum of the shaded parts of the given figures?



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

B. $1\frac{1}{4}$

C. $1\frac{3}{4}$

D. $2\frac{1}{4}$

Answer: B



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8. A small tank is $\frac{2}{5}$ full of water. The water is then poured into a large empty tank which has a capacity which is twice that of the small tank. What fraction of the large tank is filled with water?

A. $\frac{3}{5}$

B. $\frac{2}{5}$

C. $\frac{1}{5}$

D. $\frac{4}{5}$

Answer: C



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9. How many one-fourths need to be added to

$2\frac{1}{4}$ to make 5?

A. 11

B. 18

C. 9

D. 2

Answer: A



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10. Which of the following is true for the shaded fractions of models shown below ?

Model-1



Model-2



P: Shaded fraction of model-1

Q: Shaded fraction of model-2

A. $P = Q$

B. $P < Q$

C. $P > Q$

D. None of these

Answer: C



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11. Which of the following pairs of fractions are not equivalent?

A. $\frac{12}{14}, \frac{60}{70}$

B. $\frac{36}{81}, \frac{72}{162}$

C. $\frac{21}{20}, \frac{63}{60}$

D. $\frac{8}{13}, \frac{72}{78}$

Answer: D



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12. If the two fractions have same numerator, then the fraction with

- A. greater denominator is greater
- B. greater denominator is smaller
- C. greater numerator is smaller
- D. None of these

Answer: B



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13. What fraction of a day is 4 hours?

A. $\frac{1}{6}$

B. $\frac{1}{3}$

C. $\frac{2}{3}$

D. $\frac{1}{4}$

Answer: A



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14. Which of the following options is incorrect?

A. $\frac{3}{4} > \frac{2}{3}$

B. $\frac{4}{5} > \frac{1}{3}$

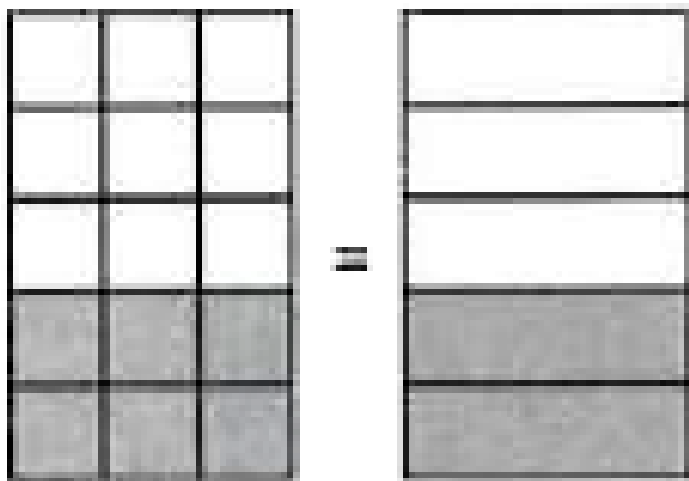
C. $\frac{9}{7} > 1$

D. $\frac{1}{2} < \frac{1}{4}$

Answer: D



15. Write the equivalent fractions represented by the shaded portions of the given figures.



A. $\frac{2}{10} = \frac{3}{5}$

B. $\frac{6}{15} = \frac{2}{5}$

C. $\frac{6}{10} = \frac{2}{5}$

D. $\frac{3}{15} = \frac{1}{5}$

Answer: B



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16. Reena eats one full bar of chocolate. Then she divides another one into 5 equal parts and eats 3 of those parts. The fraction of chocolates she has eaten is _____ .

A. $\frac{2}{5}$

B. $\frac{3}{5}$

C. $\frac{8}{5}$

D. $\frac{8}{10}$

Answer: C



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17. If $\frac{3}{4} = \frac{x}{28} = \frac{y}{32}$, then the values of x and y respectively are _____ and _____.

A. 21, 24

B. 21, 28

C. 18, 24

D. 21, 25

Answer: A



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18. Find a , if

$$5\frac{1}{3} - 3\frac{2}{3} \div 1\frac{1}{3} \div a + 3\frac{1}{5} \div 1\frac{1}{5} = 7$$

A. $1\frac{1}{2}$

B. $2\frac{1}{3}$

C. $3\frac{1}{4}$

D. None of these

Answer: D



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19. Simplify : $4\frac{3}{5} - 2\frac{7}{9} - 1\frac{2}{15} - \frac{2}{5}$

A. $\frac{14}{45}$

B. $\frac{13}{45}$

C. $\frac{16}{45}$

D. $\frac{12}{45}$

Answer: B



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20. Find the value of m and n respectively

$$5\frac{1}{m} \times n\frac{3}{4} = 20$$

A. 3,1

B. 3,3

C. 4,1

D. 5,3

Answer: B



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Everyday Mathematics

1. Tarun had $\frac{3}{4}$ kg of flour. He used $\frac{1}{5}$ kg to make chapatti. How much quantity of flour he

has left with?

A. $\frac{1}{4}$ kg

B. $\frac{11}{20}$ kg

C. $1\frac{1}{4}$ kg

D. $\frac{1}{2}$ kg

Answer: B



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2. Karan spent half of his pocket money to buy a pair of shoes. He spent half the remaining for a book. He also spent half the remaining to buy a study table. He was left with Rs. 350. With how much money he started his shopping?

A. Rs. 4000

B. Rs. 3000

C. Rs. 2800

D. Rs. 1080

Answer: C



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3. Vikas had 128 stickers. He gave $\frac{3}{8}$ of his stickers to his father and $\frac{1}{4}$ is stickers to his brother. How many stickers did he left with?

A. 50

B. 65

C. 80

D. 48

Answer: D



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4. Sudha planted tomatoes in $\frac{1}{2}$ portion of her kitchen garden. She planted spinach in one-fourth of the remaining portion. What fraction of the garden has spinach?

A. $\frac{1}{2}$

B. $\frac{1}{3}$

C. $\frac{1}{8}$

D. $\frac{1}{5}$

Answer: C



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5. Four families went on a picnic. Each family carried a cake for picnic. If $\frac{3}{4}$ of each cake was eaten, how much cake was eaten in all?

A. $\frac{3}{8}$

B. 3

C. $\frac{9}{12}$

D. 1

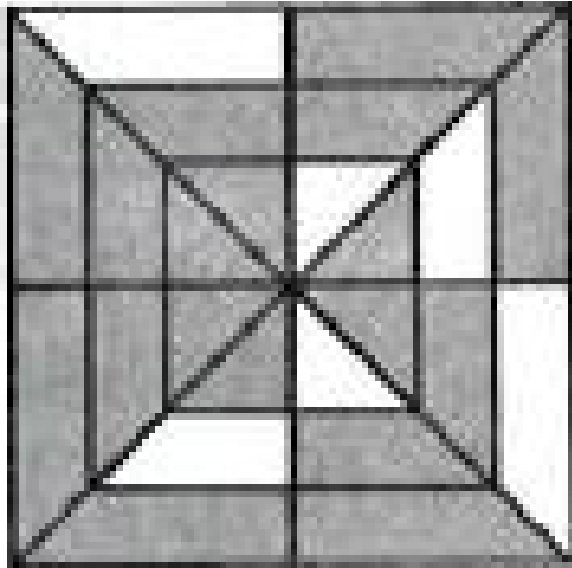
Answer: B



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Achievers Section Hots

1. What fraction of the given figure is shaded?



A. $\frac{7}{8}$

B. $\frac{5}{8}$

C. $\frac{1}{2}$

D. $\frac{3}{4}$

Answer: D



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2. The value of

$$3\frac{1}{12} - \left[1\frac{3}{4} + \left\{ 1\frac{1}{2} - \left(1\frac{1}{2} - \frac{1}{3} \right) \right\} \right]$$

is

_____.

A. $\frac{1}{2}$

B. 2

C. 1

D. 0

Answer:



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3. Look at the alphabets given below and answer the given questions.

R A S H M I

(a) What fraction of alphabets are made up of exactly 3 straight lines?

(b) What fraction of alphabets are made up of curved lines?

A. $\frac{5}{6}$ $\frac{4}{6}$

B. $\frac{1}{2}$ $\frac{1}{3}$

C. $\frac{2}{6}$ $\frac{3}{6}$

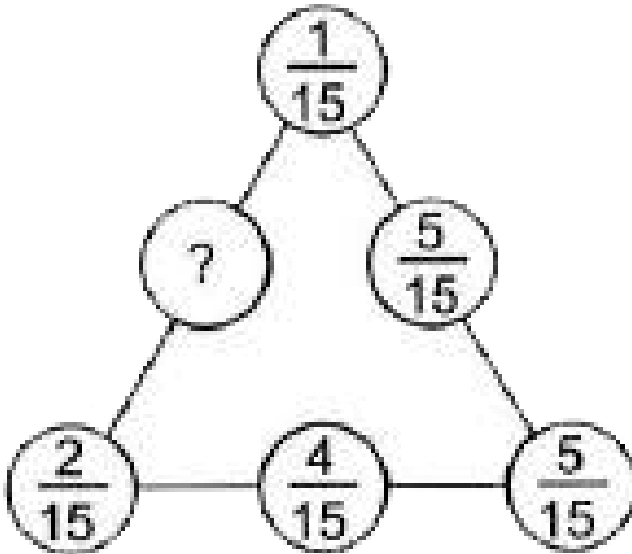
D. $\frac{1}{3}$ $\frac{1}{3}$

Answer: D



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4. What should be placed in the place of '?' so that the sum of fractions on each side of the triangle is same?



A. $\frac{7}{15}$

B. $\frac{9}{15}$

C. $\frac{6}{15}$

D. $\frac{8}{15}$

Answer: D



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5. Which of the following statements is correct?

statement-1 : Mrs Soni bought $7\frac{1}{2}$ litres of milk.

Out of this, $5\frac{3}{4}$ litres was consumed. $1\frac{1}{3}$ litres

of milk is left with her.

Statement-2 : Amit reads $\frac{3}{5}$ of a book. He finds that there are still 80 pages left to be read. Total number of pages in the book is 200.

- A. Only Statement-1
- B. Only Statement-2
- C. Both Statement-1 and Statement-2
- D. Neither Statement-1 and nor Statement-2

Answer: B



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