

EXERCISE 1: RATIO & PROPORTION

1. A set of playing cards contains 4 cards with the letters A, K, Q and J written on them. There are 9 more cards numbered 2 through 10. What is the ratio of odd-numbered cards to the other cards?

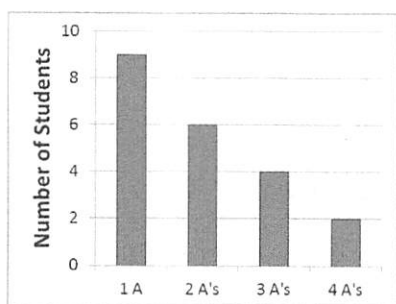
A) 4 : 9

B) 4 : 13

C) 5 : 9

D) 5 : 13

2. Base your answer on the following chart showing the number of students obtaining 1, 2, 3 or 4 A's on their monthly assessment tests.



What is the ratio of students obtaining 3 or more A's to the number of students obtaining fewer than 3 A's?

A) 2 : 7

B) 2 : 5

C) 2 : 9

D) 4 : 15

3. In a class of 24 students, 3 out of 8 are left-handed. How many right-handed students are there in the class?

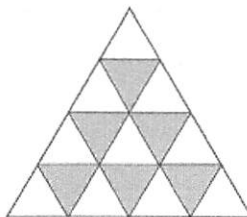
A) 5

B) 9

C) 12

D) 15

4. What fraction of the largest triangle is shaded?

A) $\frac{1}{2}$ B) $\frac{3}{8}$ C) $\frac{5}{8}$ D) $\frac{7}{16}$

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5. Base your answer to this question on the image below:



What is the ratio of the stars to the rest of the shapes?

- A) 1 : 2 B) 4 : 5 C) 4 : 9 D) 5 : 9
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6. The table below shows the colors of horses participating in a race.

Color	Number of Horses
Brown	7
Black	9
White	4

What is the ratio between the numbers of black and white horses?

- A) 4 : 9 B) 9 : 20 C) 1 : 5 D) 9 : 4
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7. A racecar driver adds a special additive to his fuel in the ratio 1 : 10 for high-performance. Which of the following is the correct combination of additive and fuel he can use?

- A) 2 liters of additive to 10 liters of fuel
B) 10 liters of additive to 1 liter of fuel
C) 2.5 liters of additive to 25 liters of fuel
D) 1 liter of additive to 10.5 liters of fuel
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8. Each student, in a class of 50, must choose a foreign language for study. 27 students chose Spanish, 5 chose German and the rest chose French. What is the ratio of the students who chose Spanish to the students who picked French?

- A) $\frac{2}{3}$ B) $\frac{1}{10}$ C) $\frac{3}{2}$ D) $\frac{9}{25}$
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9. At a party, 28 people are wearing a jacket and 21 are wearing a hat. If there are 7 people who are wearing both a jacket and a hat, what is the ratio of people wearing only a hat to people wearing only a jacket?

A) $\frac{2}{3}$

B) $\frac{3}{4}$

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

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

10. In a parking lot, the ratio of cars to trucks is 7 : 2. Which of the following is an equivalent fractional form of this ratio?

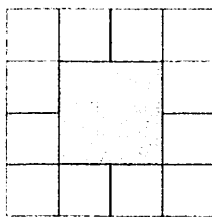
A) $\frac{2}{7}$

B) $\frac{2}{9}$

C) $\frac{7}{9}$

D) $\frac{21}{6}$

11. A small square pond is surrounded by square tiles as shown in the figure below. What is the ratio of the area of the pond to the area of the tiles?



A) $\frac{1}{4}$

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

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

D) $\frac{2}{5}$

12. A sum of \$70 is to be divided among three children in the ratio 2 : 5 : 7. What is the largest share that a child receives?

A) \$5

B) \$10

C) \$25

D) \$35

13. A cake recipe uses flour and butter in the ratio of 3 : 1. The ratio of butter to milk is 2 : 5. What is the ratio of flour to milk?

A) 2 : 3

B) 5 : 6

C) 3 : 5

D) 6 : 5

14. The length and width of a cube are 6 cm and 5 cm respectively. If the ratio of the length to the height of the cube is 3 : 1, what is the ratio of the width to the height of the cube?

- A) 5 : 2 B) 2 : 5 C) 1 : 2 D) 5 : 1

15. The salaries of Allan and Bob are in the ratio 3 : 5. The salaries of Bob and Charles are in the ratio 3 : 7. What is the ratio of the salaries of Allan, Bob and Charles?

- A) 9 : 15 : 35 B) 3 : 5 : 7 C) 3 : 7 : 3 D) 9 : 35 : 15

16. A mountaineer is climbing at an average rate of 5 ft per minute. How long will it take him to reach the top of a hill that is 400 ft high?

- A) 20 minutes B) 40 minutes C) 1 hour
20 minutes D) 1 hour 40
minutes

17. For every 5 meters that Allison covers on her bicycle, Bryan walks 2 meters. At this rate, how much distance would Bryan have covered when Allison has travelled 340 meters?

- A) 68 m B) 136 m C) 272 m D) 850 m

18. The ratio of flowering plants to non-flowering plants in a park is 4 : 9. If the number of non-flowering plants is 2,754, what is the number of flowering plants?

- A) 306 B) 847 C) 1,224 D) 6,196

19. A boat builder can build 3 boats in 4 months. How many boats can he produce in two years?

- A) 12 B) 6 C) 18 D) 32
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20. A beverage-filling machine can fill 250 cans in 3 minutes. What is the number of cans that it can fill in one hour?

- A) 83 B) 2,500 C) 750 D) 5,000
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21. Murielle bakes clay pots, in an oven, in batches of 11 pots. If a batch takes 20 minutes to bake, how many pots can she bake in her 8-hour shift during which she takes a 40-minute lunch break?

- A) 88 B) 242 C) 264 D) 800
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22. A moneychanger exchanges 4 Canadian dollars (CAD) for 3 US dollars (USD)? How many USD will a man get for CAD 630?

- A) USD 2,520.00 B) USD 1,890.00 C) USD 840.00 D) USD 472.50
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23. The ratio of white sheep to black in a herd is 13 : 3. If there are 39 black sheep what is the size of the herd?

- A) 130 B) 169 C) 208 D) 247
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24. Carlton starts depositing money in his empty bank account. He deposits \$45 every 2 months. What is the minimum number of full months after which he will have sufficient money in his account to pay for a \$300 gaming console?

- A) 6 B) 7 C) 13 D) 14
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25. The table below shows the number of students and the number of teachers in 3 different schools.

School	Students	Teachers
X	440	40
Y	480	60
Z	210	30

Which of the following lists the three schools in ascending order of teacher to student ratio?

- A) X, Y, Z B) Z, Y, X C) Z, X, Y D) Y, X, Z

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26. A box of chocolates contains 16 pieces. If 7 chocolates have been eaten, what percentage of the chocolates is left?

- A) 6.25% B) 31.25% C) 43.75% D) 56.25%

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27. A dress with a price tag of \$140 is being offered at a discount of 45%. What is the new price of the dress?

- A) \$63 B) \$77 C) \$95 D) \$134

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28. In a school, every student is required to choose one sport: 12.5% students play football, 25% play basketball and the rest participate in swimming. What is the ratio of students who play basketball to the students who participate in swimming?

- A) 1 : 5 B) 2 : 5 C) 3 : 8 D) 1 : 4

29. A boy is downloading a large video file from the internet at a rate of 5% every 3 minutes.

Given that 35% of the file has already been downloaded, how much additional time is required to complete the download?

- A) 39 minutes B) 60 minutes C) 65 minutes D) 108 minutes

30. Jane scored 26 points out of 40 on her math test. On the following test she scored 37 points out of 50. What is her combined percentage for the two tests?

- A) 63% B) 69% C) 70% D) 74%
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