
Kite & Key Academy

Selective Practice Paper

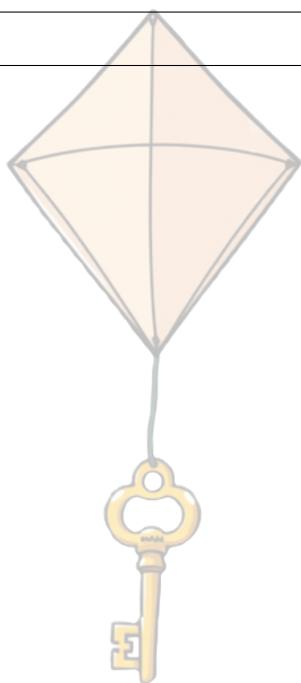
Mathematical Reasoning

40 minutes • 35 Questions

Student number _____

First name(s) _____

Family name _____



1 What is 75% of 240?

- A. 160
- B. 170
- C. 180
- D. 190
- E. 200

2 The sum of two consecutive numbers is 47. What is the smaller number?

- A. 22
- B. 23
- C. 24
- D. 25
- E. 26

3 How many faces does a triangular prism have?

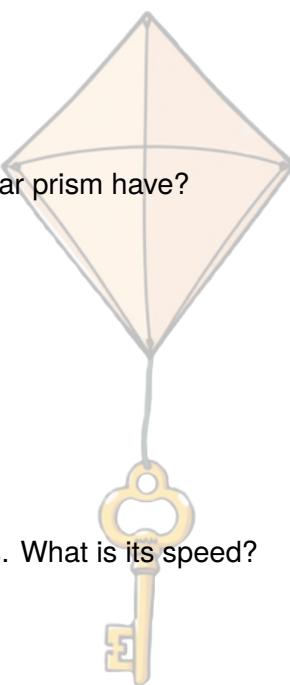
- A. 4
- B. 5
- C. 6
- D. 7
- E. 8

4 A train travels 120 km in 2 hours. What is its speed?

- A. 50 km/h
- B. 55 km/h
- C. 60 km/h
- D. 65 km/h
- E. 70 km/h

5 Which fraction is greatest?

- A. $\frac{5}{8}$
- B. $\frac{3}{4}$
- C. $\frac{7}{10}$
- D. $\frac{11}{16}$
- E. $\frac{9}{14}$



6 What is the next number: 4, 9, 16, 25, ...

- A. 30
- B. 34
- C. 36
- D. 40
- E. 49

7 How many minutes are there in $2\frac{1}{2}$ hours?

- A. 120
- B. 135
- C. 150
- D. 165
- E. 180

8 If $x = 7$, what is $3x + 5$?

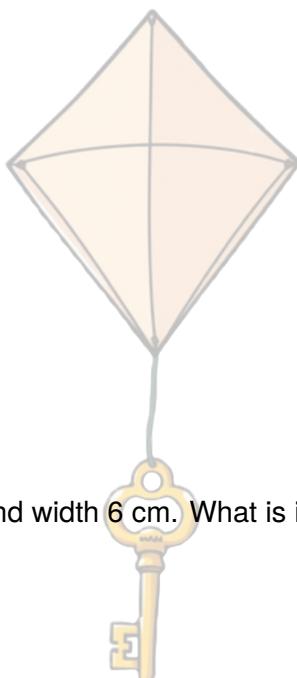
- A. 21
- B. 24
- C. 26
- D. 28
- E. 32

9 A rectangle has length 10 cm and width 6 cm. What is its area?

- A. 30
- B. 50
- C. 56
- D. 60
- E. 120

10 How many multiples of 4 are there between 10 and 40 (inclusive)?

- A. 7
- B. 8
- C. 9
- D. 10
- E. 11



11 What is the remainder when 7^4 is divided by 10?

- A. 1
- B. 3
- C. 7
- D. 9
- E. 0

12 A bag contains red and blue marbles in the ratio 5 : 3. If there are 24 marbles, how many are red?

- A. 12
- B. 15
- C. 16
- D. 18
- E. 20

13 Three consecutive even numbers have a sum of 72. What is the largest?

- A. 22
- B. 24
- C. 26
- D. 28
- E. 30

14 What is the probability of rolling a number greater than 4 on a fair die?



- A. $\frac{1}{6}$
- B. $\frac{1}{3}$
- C. $\frac{1}{2}$
- D. $\frac{2}{3}$
- E. $\frac{5}{6}$

15 A square has area 196cm^2 . What is its perimeter?

- A. 28
- B. 42
- C. 49
- D. 56
- E. 84

16 How many different 3-digit numbers can be formed from digits 1,2,3,4 without repetition?

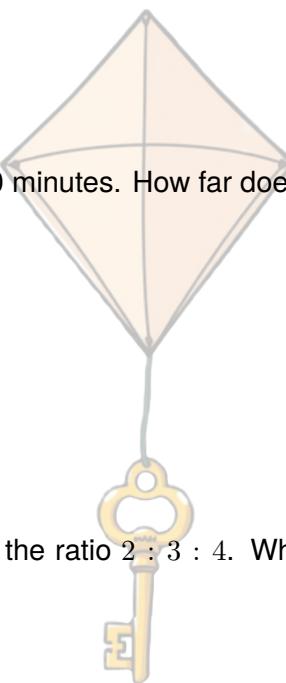
- A. 12
- B. 18
- C. 20
- D. 24
- E. 36

17 If $\frac{2}{3}$ of a number is 40, what is the number?

- A. 50
- B. 55
- C. 60
- D. 65
- E. 70

18 A cyclist rides at 18 km/h for 50 minutes. How far does she travel?

- A. 12 km
- B. 14 km
- C. 15 km
- D. 16 km
- E. 18 km



19 The angles of a triangle are in the ratio 2 : 3 : 4. What is the largest angle?

- A. 40°
- B. 60°
- C. 80°
- D. 90°
- E. 100°

20 Which of the following is always divisible by 3?

- A. $2n + 1$
- B. n^2
- C. $n(n + 1)$
- D. $n^3 - n$
- E. $2n^2$

21 How many shortest paths exist on a 3×4 grid?

- A. 10
- B. 20
- C. 35
- D. 60
- E. 120

22 A number is increased by 20% then decreased by 20%. Overall it is

- A. unchanged
- B. 4% lower
- C. 4% higher
- D. 20% lower
- E. 20% higher

23 What is the smallest prime greater than 60?

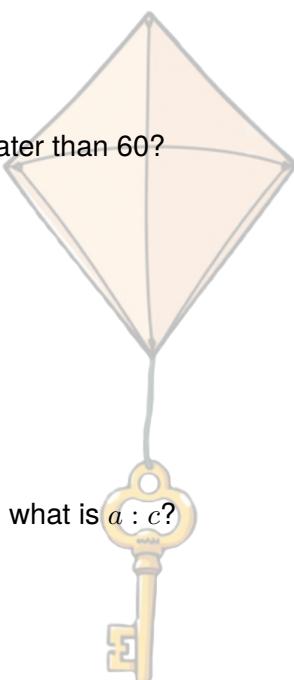
- A. 61
- B. 63
- C. 65
- D. 67
- E. 69

24 If $a : b = 4 : 7$ and $b : c = 14 : 5$, what is $a : c$?

- A. 2 : 5
- B. 4 : 5
- C. 8 : 5
- D. 16 : 5
- E. 28 : 5

25 A cube has surface area 150cm^2 . What is its volume?

- A. 64
- B. 75
- C. 100
- D. 125
- E. 216



26 What is the smallest number leaving remainder 2 when divided by 7 and remainder 3 when divided by 5?

- A.** 17
- B.** 23
- C.** 32
- D.** 38
- E.** 52

27 A clock gains 5 minutes every 3 hours. If correct at 6:00 am, what does it show at 6:00 pm?

- A.** 6:15
- B.** 6:20
- C.** 6:25
- D.** 6:30
- E.** 6:35

28 In the pattern AB, BCD, CDEFG, DEFGHIJ, how many letters are in the 7th group?

- A.** 10
- B.** 11
- C.** 12
- D.** 13
- E.** 14

29 A two-digit number has digits summing to 11. Reversing the digits increases it by 27. What is the number?

- A.** 29
- B.** 38
- C.** 47
- D.** 56
- E.** 65

30 A rectangle 12×9 has a 3×3 square removed. What is the remaining area?

- A.** 99
- B.** 102
- C.** 105
- D.** 108
- E.** 111



31 How many factors does 360 have?

- A. 18
- B. 20
- C. 24
- D. 30
- E. 36

32 What is the probability that a randomly chosen factor of 30 is even?

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

33 A sequence follows: $a_1 = 2$, $a_{n+1} = 2a_n + 1$. What is a_4 ?

- A. 15
- B. 17
- C. 19
- D. 23
- E. 31

34 If $x + y = 10$ and $xy = 21$, what is $x^2 + y^2$?



- A. 58
- B. 64
- C. 70
- D. 78
- E. 82

35 What is the remainder when 2^{100} is divided by 7?

- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

Answer Key (Internal Use)

- | | | |
|-------|-------|-------|
| 1. C | 12. D | 24. C |
| 2. B | 13. D | 25. D |
| 3. B | 14. B | 26. B |
| 4. C | 15. D | 27. C |
| 5. B | 16. D | 28. D |
| 6. C | 17. C | 29. C |
| 7. C | 18. C | 30. D |
| 8. D | 19. C | 31. C |
| 9. D | 20. D | 32. C |
| 10. B | 21. D | 33. B |
| 11. D | 22. B | 34. C |
| | 23. A | 35. B |

