

## YEAR 10 MATHEMATICS SELF ASSESSMENT TEST



**“Test yourself or your child at home, and reach out to us only if you need extra help. Otherwise, give yourself or your child a pat on the back and best of luck for the future!”**

**Instructions:** Answer all questions. All questions are multiple-choice. Some questions require calculations. Calculators may be used where appropriate.

## Number & Algebra

1. Simplify:  $8x + 5x - 3x$

- A)  $10x$
  - B)  $8x$
  - C)  $5x$
  - D)  $12x$
- 

2. Solve:  $5y - 12 = 18$

- A) 5
  - B) 6
  - C) 7
  - D) 8
- 

3. Expand:  $(x + 4)(x + 9)$

- A)  $x^2 + 13x + 36$
  - B)  $x^2 + 36x + 13$
  - C)  $x^2 + 9x + 4$
  - D)  $x^2 + 36x$
- 

4. Factorise:  $x^2 + 13x + 40$

- A)  $(x + 5)(x + 8)$
  - B)  $(x + 4)(x + 10)$
  - C)  $(x + 2)(x + 20)$
  - D)  $(x + 8)(x + 5)$
- 

5. Solve:  $4(x - 3) = 20$

- A) 5
  - B) 6
  - C) 7
  - D) 8
- 

6. Which of the following is a prime number?

- A) 57
  - B) 59
  - C) 63
  - D) 65
-

7. Simplify:  $\frac{5}{6} + \frac{1}{3}$

- A) 1
- B)  $\frac{3}{2}$
- C)  $\frac{7}{6}$
- D)  $\frac{5}{3}$

---

8. What is 40% of 250?

- A) 90
- B) 100
- C) 120
- D) 130

---

9. Convert 0.875 to a fraction.

- A)  $\frac{7}{8}$
- B)  $\frac{8}{7}$
- C)  $\frac{3}{4}$
- D)  $\frac{9}{8}$

---

10. Which of the following is divisible by 15?

- A) 225
- B) 232
- C) 248

D) 260

---

## Geometry & Measurement

11. Area of a rectangle with length 25 cm and width 8 cm:

- A)  $200 \text{ cm}^2$
- B)  $205 \text{ cm}^2$
- C)  $210 \text{ cm}^2$
- D)  $215 \text{ cm}^2$

---

12. Perimeter of a square with side 18 cm:

- A) 60 cm
- B) 68 cm
- C) 72 cm
- D) 76 cm

---

13. A triangle has angles  $55^\circ$  and  $65^\circ$ . Find the third angle.

- A)  $60^\circ$
- B)  $70^\circ$
- C)  $75^\circ$
- D)  $80^\circ$

---

14. Convert 5.2 m to cm.

- A) 52 cm
  - B) 520 cm
  - C) 5200 cm
  - D) 0.52 cm
- 

15. Circumference of a circle with radius 14 cm ( $\pi \approx 3.14$ ):

- A) 43.96 cm
  - B) 87.92 cm
  - C) 88 cm
  - D) 90 cm
- 

16. Volume of a cube with side 9 cm:

- A)  $729 \text{ cm}^3$
  - B)  $512 \text{ cm}^3$
  - C)  $243 \text{ cm}^3$
  - D)  $81 \text{ cm}^3$
- 

17. Which shape has two pairs of parallel sides?

- A) Rectangle
- B) Trapezium
- C) Triangle

D) Circle

---

18. Sum of interior angles of a heptagon:

- A)  $900^\circ$
  - B)  $1080^\circ$
  - C)  $1200^\circ$
  - D)  $1260^\circ$
- 

19. Quadrilateral has angles  $85^\circ$ ,  $95^\circ$ ,  $110^\circ$ . Fourth angle =

- A)  $70^\circ$
  - B)  $80^\circ$
  - C)  $90^\circ$
  - D)  $100^\circ$
- 

20. Distance around a circle is called:

- A) Diameter
  - B) Radius
  - C) Circumference
  - D) Chord
- 

Statistics & Probability

21. Mean of  $\{12, 16, 18, 20, 24\} =$

A) 16

B) 18

C) 20

D) 22

---

22. Mode of  $\{5, 7, 8, 7, 9, 7\} =$

A) 5

B) 7

C) 8

D) 9

---

23. Median of  $\{4, 6, 8, 10, 12\} =$

A) 6

B) 8

C) 10

D) 12

---

24. Die rolled. Probability of 4 or 5 =

A)  $1/3$

B)  $1/2$

C)  $1/6$

D)  $1/4$

---

25. Bag contains 3 red, 5 blue, 7 green balls. Probability of green =

A)  $7/15$

B)  $5/15$

C)  $3/15$

D)  $1/3$

---

26. Spinner has 10 equal sections. Probability of landing on 1 =

A)  $1/10$

B)  $1/5$

C)  $1/2$

D)  $1/4$

---

27. Class of 32 students has 20 girls. Probability of picking a girl =

A)  $5/8$

B)  $3/8$

C)  $2/3$

D)  $1/2$

---

28. Range of  $\{21, 28, 32, 40, 50\} =$

- A) 28
  - B) 29
  - C) 30
  - D) 32
- 

29. Best graph to show percentages:

- A) Bar graph
  - B) Line graph
  - C) Pie chart
  - D) Histogram
- 

30. Scores: 15, 17, 18, 20. Mean =

- A) 17
  - B) 17.5
  - C) 18
  - D) 18.5
- 

Algebra & Word Problems

31. Solve:  $6x - 9 = 21$

- A) 4
- B) 5
- C) 6
- D) 7

---

32. Expand:  $(2x + 3)(x + 5)$

- A)  $2x^2 + 13x + 15$
  - B)  $2x^2 + 10x + 15$
  - C)  $2x^2 + 15x + 3$
  - D)  $2x^2 + 8x + 15$
- 

33. Factorise:  $x^2 + 12x + 35$

- A)  $(x + 5)(x + 7)$
  - B)  $(x + 7)(x + 5)$
  - C)  $(x + 1)(x + 35)$
  - D)  $(x + 2)(x + 18)$
- 

34. Evaluate:  $5^3 + 2^4$

- A) 117
  - B) 125
  - C) 133
  - D) 137
- 

35. Solve:  $3(x - 4) = 15$

- A) 7
- B) 8
- C) 9

D) 10

---

36. Rectangle: length 18 cm, width 10 cm. Perimeter =

A) 56 cm

B) 58 cm

C) 60 cm

D) 62 cm

---

37. Book costs \$18. Buy 6 books. Total =

A) \$100

B) \$102

C) \$108

D) \$110

---

38. Train travels 150 km in 2.5 hours. Speed =

A) 50 km/h

B) 55 km/h

C) 60 km/h

D) 65 km/h

---

39. Convert 3.75 hours to minutes =

A) 200

B) 210

C) 225

D) 230

---

40. Convert 9600 g to kg =

A) 9.6 kg

B) 96 kg

C) 0.96 kg

D) 960 kg

---

Advanced / Mixed Problems

41. Which is a perfect square?

A) 81

B) 85

C) 90

D) 95

---

42. Simplify:  $\frac{36}{48}$

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

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

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

D)  $\frac{3}{5}$

---

A) 50

B) 54

C) 55

D) 60

---

43. Reciprocal of  $\frac{8}{11} =$

A)  $\frac{11}{8}$

B)  $\frac{8}{11}$

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

D)  $\frac{1}{11}$

---

47.  $48 \div 0.8 =$

A) 60

B) 56

C) 50

D) 48

---

44. Largest decimal: 0.82, 0.825, 0.818, 0.83

A) 0.825

B) 0.83

C) 0.82

D) 0.818

---

48. 4 pencils cost \$2.40. Cost of 10 pencils =

A) \$5

B) \$6

C) \$6.50

D) \$7

---

45. Solve:  $x/5 = 9$

A) 40

B) 45

C) 50

D) 55

---

49. Simplify:  $6x + 7x - 3x$

A)  $10x$

B)  $12x$

C)  $8x$

D)  $9x$

---

46. 30% of 180 =

---



50. Sequence: 5, 10, 20, 40, \_\_,  
160

A) 60

B) 70

C) 80

D) 90



# Nexa Tutoring

Foundations for future success