

## YEAR 9 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:  $7x + 3x - 5x$

- A)  $5x$
  - B)  $3x$
  - C)  $7x$
  - D)  $8x$
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4. Factorise:  $x^2 + 11x + 24$

- A)  $(x + 3)(x + 8)$
  - B)  $(x + 4)(x + 6)$
  - C)  $(x + 2)(x + 12)$
  - D)  $(x + 5)(x + 5)$
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2. Solve:  $4y - 9 = 15$

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

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

- A) 7
  - B) 8
  - C) 9
  - D) 10
- 

3. Expand:  $(x + 6)(x + 2)$

- A)  $x^2 + 8x + 12$
  - B)  $x^2 + 12x + 8$
  - C)  $x^2 + 8x + 6$
  - D)  $x^2 + 12x + 6$
- 

6. Which of the following is a prime number?

- A) 39
  - B) 41
  - C) 45
  - D) 49
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7. Simplify:  $\frac{7}{8} + \frac{3}{8}$

- A) 1
  - B)  $\frac{10}{8}$
  - C)  $\frac{9}{8}$
  - D)  $\frac{7}{16}$
- 

8. What is 30% of 360?

- A) 90
  - B) 100
  - C) 108
  - D) 120
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9. Convert 0.875 to a fraction.

- A)  $\frac{7}{8}$
  - B)  $\frac{8}{7}$
  - C)  $\frac{3}{4}$
  - D)  $\frac{7}{9}$
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10. Which of the following is divisible by 12?

- A) 144
  - B) 158
  - C) 165
  - D) 172
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## Geometry & Measurement

11. The area of a rectangle with length 18 cm and width 7 cm is:

- A)  $125 \text{ cm}^2$
  - B)  $126 \text{ cm}^2$
  - C)  $130 \text{ cm}^2$
  - D)  $140 \text{ cm}^2$
- 

12. The perimeter of a square with side 15 cm is:

- A) 45 cm
  - B) 50 cm
  - C) 60 cm
  - D) 75 cm
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13. A triangle has angles  $40^\circ$  and  $65^\circ$ . Find the third angle.

- A)  $75^\circ$
  - B)  $85^\circ$
  - C)  $90^\circ$
  - D)  $95^\circ$
- 

14. Convert 4.8 m to cm.

- A) 48 cm
- B) 480 cm
- C) 4800 cm
- D) 0.48 cm

15. Circumference of a circle with radius 10 cm ( $\pi \approx 3.14$ ):

- A) 31.4 cm
  - B) 62.8 cm
  - C) 100 cm
  - D) 50 cm
- 

19. A quadrilateral has angles  $80^\circ$ ,  $95^\circ$ ,  $100^\circ$ . The fourth angle is:

- A)  $85^\circ$
  - B)  $90^\circ$
  - C)  $95^\circ$
  - D)  $100^\circ$
- 

16. Volume of a cube with side 8 cm:

- A)  $64 \text{ cm}^3$
  - B)  $128 \text{ cm}^3$
  - C)  $512 \text{ cm}^3$
  - D)  $256 \text{ cm}^3$
- 

20. Distance around a circle is called:

- A) Diameter
  - B) Radius
  - C) Circumference
  - D) Chord
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17. Which shape has two pairs of parallel sides?

- A) Rectangle
  - B) Trapezium
  - C) Triangle
  - D) Circle
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### Statistics & Probability

21. Mean of {8, 12, 15, 20, 25} is:

- A) 15
  - B) 16
  - C) 17
  - D) 18
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18. Sum of interior angles of a hexagon is:

- A)  $360^\circ$
  - B)  $540^\circ$
  - C)  $720^\circ$
  - D)  $900^\circ$
- 

22. Mode of {6, 9, 12, 9, 15, 9} is:

- A) 6
  - B) 9
  - C) 12
  - D) 15
-

23. Median of {3, 7, 9, 11, 13} is:

- A) 7
  - B) 9
  - C) 11
  - D) 13
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27. A class of 30 students has 18 girls. Probability of picking a girl:

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

24. A die is rolled. Probability of getting 5 or 6:

- A)  $\frac{1}{3}$
  - B)  $\frac{1}{6}$
  - C)  $\frac{1}{2}$
  - D)  $\frac{1}{4}$
- 

28. Range of {18, 22, 26, 35, 42} is:

- A) 18
  - B) 24
  - C) 25
  - D) 30
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25. A bag contains 4 red, 5 blue, and 6 green balls. Probability of green:

- A)  $\frac{6}{15}$
  - B)  $\frac{4}{15}$
  - C)  $\frac{5}{15}$
  - D)  $\frac{1}{3}$
- 

29. Best graph to show percentages:

- A) Bar graph
  - B) Line graph
  - C) Pie chart
  - D) Histogram
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26. A spinner has 8 equal sections. Probability of landing on one section:

- A)  $\frac{1}{4}$
  - B)  $\frac{1}{6}$
  - C)  $\frac{1}{8}$
  - D)  $\frac{1}{2}$
- 

30. Student scores 10, 12, 14, 16. Mean is:

- A) 12
  - B) 13
  - C) 14
  - D) 15
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## Algebra & Word Problems

31. Solve:  $5x - 8 = 17$

A) 4

B) 5

C) 6

D) 7

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32. Expand:  $(x + 2)(x + 7)$

A)  $x^2 + 9x + 14$

B)  $x^2 + 14x + 9$

C)  $x^2 + 10x + 14$

D)  $x^2 + 12x + 14$

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33. Factorise:  $x^2 + 10x + 21$

A)  $(x + 3)(x + 7)$

B)  $(x + 7)(x + 5)$

C)  $(x + 1)(x + 21)$

D)  $(x + 2)(x + 9)$

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

A) 61

B) 64

C) 73

D) 91

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35. Solve:  $2(x - 5) = 16$

A) 8

B) 12

C) 13

D) 14

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36. Rectangle length 20 cm, width 8 cm.  
Perimeter is:

A) 48 cm

B) 52 cm

C) 56 cm

D) 60 cm

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37. A book costs \$12. Buy 5 books. Total cost:

A) \$55

B) \$56

C) \$60

D) \$65

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38. A train travels 120 km in 2 hours.  
Speed is:

A) 50 km/h

B) 55 km/h

C) 60 km/h

D) 65 km/h

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

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39. Convert 4.5 hours to minutes.

- A) 260
  - B) 270
  - C) 280
  - D) 290
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43. Reciprocal of  $\frac{7}{9}$  is:

- A)  $\frac{9}{7}$
  - B)  $\frac{7}{9}$
  - C)  $\frac{1}{7}$
  - D)  $\frac{1}{9}$
- 

40. Convert 7500 g to kg.

- A) 7.5 kg
  - B) 75 kg
  - C) 0.75 kg
  - D) 750 kg
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44. Largest decimal: 0.72, 0.7, 0.725, 0.715

- A) 0.7
  - B) 0.715
  - C) 0.72
  - D) 0.725
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### Advanced / Mixed Problems

41. Which is a perfect square?

- A) 72
  - B) 81
  - C) 90
  - D) 100
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45. Solve:  $x/4 = 6$

- A) 20
  - B) 22
  - C) 24
  - D) 26
- 

42. Simplify:  $\frac{24}{36}$

- A)  $\frac{2}{3}$
- B)  $\frac{3}{2}$
- C)  $\frac{4}{3}$

46. 25% of 200 is:

- A) 40
- B) 45
- C) 50
- D) 55

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47.  $36 \div 0.6 =$

- A) 36
  - B) 60
  - C) 54
  - D) 72
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48. 3 pencils cost \$1.80. Cost of 10 pencils:

- A) \$5
  - B) \$6
  - C) \$6.50
  - D) \$7
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49. Simplify:  $4x + 5x - 2x$

- A)  $7x$
  - B)  $6x$
  - C)  $5x$
  - D)  $8x$
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50. Sequence: 3, 6, 12, 24, \_\_, 96

- A) 36
- B) 48
- C) 50
- D) 72