

Year 9 NAPLAN numeracy practice test

30 questions in NAPLAN's question styles, Australian Curriculum Year 9. Time: 45 minutes. Questions 1 to 22: calculator allowed. Questions 23 to 30: no calculator. Circle one answer for each question. Answers with explanations are on the last page: mark it with your child afterwards.

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1. Solve $5x - 7 = 2x + 8$

- A. $x = 3$
- B. $x = 5$
- C. $x = 1$
- D. $x = 15$

2. Expand $3(2x - 4)$

- A. $6x - 4$
- B. $5x - 7$
- C. $6x - 12$
- D. $6x + 12$

3. Factorise $8x + 12$ fully

- A. $2(4x + 12)$
- B. $4(2x + 3)$
- C. $8(x + 4)$
- D. $4(2x + 12)$

4. Simplify $x^5 \times x^3$

- A. x^{15}
- B. $2x^8$
- C. x^2
- D. x^8

5. $(2^3)^2 = ?$

- A. 12
- B. 36
- C. 64
- D. 32

6. 3.6×10^4 written as an ordinary number is

- A. 3 600
- B. 36 000
- C. 360 000
- D. 0.00036

- 7. A right-angled triangle has shorter sides 6 cm and 8 cm. The hypotenuse is**
- A. 14 cm
 - B. 7 cm
 - C. 10 cm
 - D. 100 cm
- 8. A right-angled triangle has hypotenuse 13 cm and one side 5 cm. The other side is**
- A. 8 cm
 - B. 12 cm
 - C. 18 cm
 - D. $\sqrt{194}$ cm
- 9. The gradient of the line through (1, 2) and (3, 8) is**
- A. 2
 - B. $\frac{1}{3}$
 - C. 6
 - D. 3
- 10. The y-intercept of $y = 4x - 7$ is**
- A. 4
 - B. 7
 - C. 0
 - D. -7
- 11. Increase \$250 by 12%**
- A. \$262
 - B. \$300
 - C. \$280
 - D. \$238
- 12. Simple interest on \$2 000 at 5% per year for 3 years is**
- A. \$100
 - B. \$300
 - C. \$2 300
 - D. \$30
- 13. Divide \$180 in the ratio 2 : 7**
- A. \$20 and \$160
 - B. \$60 and \$120
 - C. \$40 and \$140
 - D. \$90 and \$90
- 14. On a map with scale 1 : 50 000, a distance of 4 cm represents**
- A. 20 km
 - B. 2 km
 - C. 200 m
 - D. 0.2 km

15. The area of a circle with radius 5 cm (use $\pi \approx 3.14$) is about

- A. 31.4 cm^2
- B. 15.7 cm^2
- C. 25 cm^2
- D. 78.5 cm^2

16. A cylinder has radius 3 cm and height 10 cm. Its volume is about

- A. 94 cm^3
- B. 283 cm^3
- C. 188 cm^3
- D. 942 cm^3

17. The interior angles of a hexagon add to

- A. 540°
- B. 360°
- C. 720°
- D. $1\,080^\circ$

18. Two triangles are similar. Sides 4 cm and 6 cm in the small one correspond to 10 cm and ? cm in the large one.

- A. 12 cm
- B. 8 cm
- C. 15 cm
- D. 10 cm

19. Two fair coins are tossed. The probability of two heads is

- A. $1/2$
- B. $1/4$
- C. $1/3$
- D. $3/4$

20. Scores in a quiz: 2 (3 students), 3 (5 students), 4 (2 students). The mean score is

- A. 3
- B. 9.7
- C. 2.9
- D. 3.5

21. In a right-angled triangle the side opposite angle θ is 3 and the side adjacent is 4. $\tan \theta =$

- A. 1.33
- B. 0.6
- C. 0.8
- D. 0.75

22. 90 km/h is the same as

- A. 90 m/s
- B. 324 m/s
- C. 25 m/s
- D. 15 m/s

23. $(-3)^2 = ?$

- A. -9
- B. 6
- C. 9
- D. -6

24. 2 to the power of -1 (2^{-1}) = ?

- A. -2
- B. $1/2$
- C. $-1/2$
- D. 2

25. Solve $x/4 = 6$

- A. $x = 1.5$
- B. $x = 10$
- C. $x = 2$
- D. $x = 24$

26. Simplify $12a^2b \div 4ab$

- A. $3ab$
- B. $3a$
- C. $3b$
- D. $8a$

27. 20% of 45 = ?

- A. 90
- B. 4.5
- C. 9
- D. 25

28. $\sqrt{144} = ?$

- A. 72
- B. 12
- C. 14
- D. 11

29. Which fraction equals 0.375?

- A. $3/4$
- B. $37/100$
- C. $5/8$
- D. $3/8$

30. Expand and simplify $(x + 3)(x + 2)$

- A. $x^2 + 6$
- B. $x^2 + 5x + 6$
- C. $x^2 + 6x + 5$
- D. $2x + 5$

Answers · Year 9 NAPLAN numeracy practice test

1. **B** $x = 5$ — $3x = 15$, so $x = 5$.
2. **C** $6x - 12$ — $3 \times 2x = 6x$ and $3 \times -4 = -12$.
3. **B** $4(2x + 3)$ — The highest common factor is 4.
4. **D** x^8 — Same base, add the indices: $5 + 3 = 8$.
5. **C** 64 — $2^6 = 64$.
6. **B** 36 000 — Move the decimal point 4 places: 36 000.
7. **C** 10 cm — $6^2 + 8^2 = 100$, $\sqrt{100} = 10$.
8. **B** 12 cm — $13^2 - 5^2 = 144$, $\sqrt{144} = 12$.
9. **D** 3 — Rise 6 over run 2 = 3.
10. **D** -7 — The constant term: -7.
11. **C** \$280 — 12% of 250 is 30; $250 + 30 = 280$.
12. **B** \$300 — $2\,000 \times 0.05 \times 3 = 300$.
13. **C** \$40 and \$140 — 9 parts = 180, one part = 20; 2 parts = 40, 7 parts = 140.
14. **B** 2 km — $4 \times 50\,000\text{ cm} = 200\,000\text{ cm} = 2\text{ km}$.
15. **D** 78.5 cm^2 — $\pi \times 5^2 = 3.14 \times 25 = 78.5$.
16. **B** 283 cm^3 — $\pi \times 3^2 \times 10 = 90\pi \approx 283$.
17. **C** 720° — $(6 - 2) \times 180^\circ = 720^\circ$.
18. **C** 15 cm — Scale factor $10 \div 4 = 2.5$; $6 \times 2.5 = 15$.
19. **B** $1/4$ — HH, HT, TH, TT: one of four.
20. **C** 2.9 — $(6 + 15 + 8) \div 10 = 2.9$.
21. **D** 0.75 — $\tan = \text{opposite} \div \text{adjacent} = 3/4$.
22. **C** 25 m/s — $90\,000\text{ m} \div 3\,600\text{ s} = 25\text{ m/s}$.
23. **C** 9 — Negative $\times$ negative = 9.
24. **B** $1/2$ — A negative index is a reciprocal: $1/2$.
25. **D** $x = 24$ — Multiply both sides by 4.
26. **B** $3a$ — $12 \div 4 = 3$, $a^2 \div a = a$, $b \div b = 1$.
27. **C** 9 — A fifth of 45 is 9.
28. **B** 12 — $12 \times 12 = 144$.
29. **D** $3/8$ — $3 \div 8 = 0.375$.
30. **B** $x^2 + 5x + 6$ — $x^2 + 2x + 3x + 6$.

Score out of 30: _____ 26–30 comfortable · 20–25 solid, fix the wobbling topic · 13–19 gaps in the Year 9 strand · under 13 start a year lower.

Bring the marked test to a free 30-minute demo class and we will tell you which topics to fix first:
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