30 Advanced Maths Word Problems for Year 5-6

Aligned to the Australian Curriculum

A collection of challenging mathematics word problems with detailed solutions. Topics include fractions, decimals, percentages, measurement, geometry, and advanced problem-solving strategies.

Problem 1: Fractions and Sharing

Sally bakes 24 cupcakes. She wants to divide them equally among her 5 friends and herself. How many cupcakes does each person get? How many will be left over?

Solution: There are 6 people in total. 24 divided by 6 is 4, so each person gets 4 cupcakes. 4 × 6 = 24, so none are left over.
Answer: Each person gets 4 cupcakes, and there are 0 left.

Problem 2: Large Numbers Multiplication

A concert hall has 34 rows, each row contains 28 seats. If all the seats are filled, how many people are at the concert?

Solution: 34 × 28 = 952.
Answer: 952 people.

Problem 3: Decimals in Money

Amira buys 2 packs of pens at $3.45 each and a notebook for $2.80. If she pays with a $10 note, how much change does she get?

Solution: The pens cost 2 × $3.45 = $6.90. Total spent is $6.90 + $2.80 = $9.70. Change is $10.00 - $9.70 = $0.30.
Answer: $0.30 change.

Problem 4: Percentages in Sport

A football team won 80% of its 25 games this season. How many games did they win?

Solution: 80% of 25 = 0.8 × 25 = 20.
Answer: 20 games.

Problem 5: Area of a Rectangle

A rectangular garden is 8 metres long and 6 metres wide. What is its area in square metres?

Solution: Area = length × width = 8 × 6 = 48 m².
Answer: 48 square metres.

Problem 6: Time Calculation

A train departs at 09:45 and arrives at its destination at 13:30. How long is the journey?

Solution: From 09:45 to 13:30 is 3 hours 45 minutes.
Answer: 3 hours 45 minutes.

Problem 7: Factor Pairs

List all factor pairs of 36.

Solution: Factor pairs: (1, 36), (2, 18), (3, 12), (4, 9), (6, 6).
Answer: 1 and 36, 2 and 18, 3 and 12, 4 and 9, 6 and 6.

Problem 8: Perimeter of Compound Shape

A shape is made from two rectangles side by side: one 4 cm wide and 5 cm long, the other 3 cm wide and 5 cm long. What is the perimeter of the combined shape?

Solution: Length is 4 + 3 = 7 cm; width is 5 cm for both. Perimeter = 2 × (7 + 5) = 24 cm.
Answer: 24 cm.

Problem 9: Order of Operations

Calculate: 3 + 6 × (5 + 4) ÷ 3 - 7

Solution: 5+4=9. 6×9=54. 54÷3=18. 3+18=21. 21-7=14.
Answer: 14

Problem 10: Comparing Fractions

Which is greater: 5/8 or 3/4?

Solution: 3/4 = 6/8; 6/8 > 5/8.
Answer: 3/4 is greater.

Problem 11: Volume Calculations

A box measures 10 cm in length, 6 cm in width, and 4 cm in height. What is its volume?

Solution: Volume = 10 × 6 × 4 = 240 cm³.
Answer: 240 cm³

Problem 12: Simple Interest

Sam invested $200 at an interest rate of 3% per year. How much interest will he earn after 2 years?

Solution: 3% of $200 = $6 per year. Over 2 years: $6 × 2 = $12.
Answer: $12 interest.

Problem 13: Greatest Common Factor

What is the greatest common factor of 56 and 84?

Solution: Factors: 56 (1,2,4,7,8,14,28,56), 84 (1,2,3,4,6,7,12,14,21,28,42,84). Largest is 28.
Answer: 28

Problem 14: Convert Units

Convert 3.5 metres to centimetres and millimetres.

Solution: 3.5 m × 100 = 350 cm; 3.5 m × 1000 = 3500 mm.
Answer: 350 cm; 3500 mm.

Problem 15: Ratio

In a fruit basket, the ratio of apples to oranges is 5:3. If there are 24 oranges, how many apples are there?

Solution: 5:3 = apples:oranges. 24/3 = 8, so apples = 5×8 = 40.
Answer: 40 apples.

Problem 16: Angles in a Triangle

One angle in a triangle is 45°, and another is 95°. What is the size of the third angle?

Solution: A triangle's angles sum to 180°. 45° + 95° = 140°. Third angle = 180° - 140° = 40°.

Answer: 40°

Problem 17: Multiplying Decimals

What is 4.7 × 3.2?

Solution: 4.7 × 3.2 = 15.04

Answer: 15.04

Problem 18: Plan a Budget

Lisa spends $120 on a school trip, $34 on books, and $15.50 on lunch. She had $200. How much money does she have left?

Solution: $120 + $34 + $15.50 = $169.50. $200 - $169.50 = $30.50.

Answer: $30.50

Problem 19: Remainders

What is the remainder when 421 is divided by 8?

Solution: 8 × 52 = 416 → 421 - 416 = 5

Answer: 5

Problem 20: Decimal Rounding

Round 7.348 to two decimal places.

Solution: 7.35 (since the third decimal, 8, rounds up the last 4 to 5).

Answer: 7.35

Problem 21: Equivalent Fractions

Fill in the blank: 3/5 = ?/20

> **Solution:** 5 × 4 = 20; 3 × 4 = 12.
>
> **Answer:** 12/20

Problem 22: Volume for an Aquarium

A fish tank is 60 cm long, 30 cm wide, and 40 cm high. What is its capacity in litres? (1,000 cm³ = 1 litre)

> **Solution:** Volume = 60 × 30 × 40 = 72,000 cm³. 72,000 ÷ 1,000 = 72 litres.
>
> **Answer:** 72 litres.

Problem 23: Probability

A bag contains 4 red, 5 blue, and 7 green marbles. What is the probability of drawing a green marble?

> **Solution:** Total marbles = 4+5+7=16. Probability = 7/16.
>
> **Answer:** 7/16

Problem 24: Temperature Change

The temperature dropped from 18°C in the afternoon to 7°C at night. By how many degrees did the temperature fall?

> **Solution:** 18°C - 7°C = 11°C
>
> **Answer:** 11°C

Problem 25: Percentage Discount

A jacket costs $65, but is on sale for 20% off. What is the sale price?

Solution: 20% of $65 = $13. $65 - $13 = $52.

Answer: $52

Problem 26: Symmetry

How many lines of symmetry does a regular hexagon have?

Solution: Six.

Answer: 6 lines of symmetry.

Problem 27: Divisibility

Is 3,621 divisible by 9?

Solution: Sum of digits: 3+6+2+1=12. 12 is not divisible by 9.

Answer: No, 3,621 is not divisible by 9.

Problem 28: Elapsed Time

If a movie starts at 16:20 and ends at 18:00, how long is the movie?

Solution: 18:00 - 16:20 = 1 hour 40 minutes.

Answer: 1 hour 40 minutes.

Problem 29: Patterns and Rules

The sequence is 2, 6, 12, 20, ... What is the next number?

Solution: Differences are 4, 6, 8 (increasing by 2). Next difference is 10 → 20+10=30.

Answer: 30

Problem 30: Percentage Increase

A jumper was $45 last year and is now $54. What is the percentage increase? (Give your answer to the nearest percent.)

Solution: Increase = $54-$45 = $9. Percentage increase = 9/45 × 100 = 20%

Answer: 20%