Year 6 SATs Booster Pack Booklet

With Fluency, Reasoning and Problem Solving Practice

Based on the UK National Curriculum

Fractions, Decimals and Percentages - Fluency

1. What is 1/4 of 32?

2. Convert 3/10 to a decimal.

3. Write 0.75 as a fraction.

4. What is 50% of 120?

5. Shade 2/3 of a shape with 12 parts.

6. What is 0.4 + 0.35?

7. Find 1/5 of 45.

8. Write 3/5 as a percentage.

9. Which is greater: 0.3 or 1/4?

10. What is 25% of 80?

[Use the space below to show your working.]

Fractions, Decimals and Percentages - Reasoning

1. Sam spent 3/5 of his money and had £12 left. How much did he start with?

2. Explain why 0.6 is greater than 1/2.

3. A recipe needs 3/4 cup of sugar. How much sugar is needed for 4 batches?

4. Is 0.25 the same as 25%? Explain your answer.

5. 2/3 of a class are boys. If there are 30 students, how many are girls?

6. Rosie ate 2/5 of a pizza. Ben ate 40%. Who ate more?

7. Explain how to convert 7/10 into a percentage.

8. A coat is reduced by 25%. Its original price was £80. What is the new price?

9. Sam got 18 out of 20 questions right. What percentage is this?

10. Explain why 0.33 is not exactly 1/3.

[Use the space below to show your working.]

Fractions, Decimals and Percentages - Problem Solving

1. A bottle holds 1.5L of juice. Anna drinks 3/5 of it. How much is left?

2. A school has 120 pupils. 30% are in Year 6. How many pupils is that?

3. A baker uses 2/3 of 450g of flour. How much is used?

4. Olivia had £20. She spent 1/4 on books and 35% on clothes. How much is left?

5. If 3/8 of a class are girls and there are 24 pupils, how many boys are there?

6. Convert 1/5 to a decimal and use it to find 1/5 of 300.

7. A sale offers 20% off a £65 jacket. What is the sale price?

8. Which is more: 3/4 of £60 or 80% of £60?

9. A pizza is cut into 8 slices. Jake eats 5. What fraction and percentage has he eaten?

10. Write a word problem involving 3/10 and solve it.

[Use the space below to show your working.]

1. 468 + 357 =

2. 1,000 - 472 =

3. 27 x 6 =

4. 144 / 12 =

5. 8 x 9 =

6. 3,200 + 1,450 =

7. 900 - 275 =

8. 53 x 4 =

9. 96 / 8 =

10. 120 + 250 =

[Use the space below to show your working.]

1. Joe had 250 stickers. He gave 85 to his friend. How many does he have left?

2. Sarah buys 3 books at £6.75 each. How much does she spend?

3. A bus can carry 52 people. How many buses are needed for 234 people?

4. Tom saves £10 a week. How much does he save in 9 weeks?

5. A baker bakes 12 trays of cupcakes. Each tray has 24 cakes. How many cakes?

6. One pencil costs 45p. What is the cost of 8 pencils?

7. Jack has £5. He spends £2.85. How much change does he get?

8. Lily divided 128 sweets equally among 8 friends. How many each?

9. A ticket costs £4.25. How much do 6 tickets cost?

10. A car travels 90 miles in 3 hours. What is the speed per hour?

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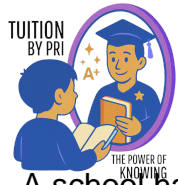
1. A school has 326 boys and 298 girls. How many children in total?

2. There are 5 shelves. Each shelf holds 36 books. How many books altogether?

3. Sam has £20. He buys 3 toys costing £4.75 each. How much change does he get?

4. A coach has 45 seats. How many coaches are needed for 315 people?

5. A shop sold 378 apples on Monday and 496 on Tuesday. How many in total?

6. Tom has 4 boxes with 12 pens in each. He gives away 18 pens. How many left?

7. 6 children share £48 equally. How much does each get?

8. A baker needs 36 eggs. He buys boxes of 6. How many boxes needed?

9. A ticket costs £3.50. How much for 7 people?

10. A car travels 240 miles in 4 hours. How many miles per hour?

[Use the space below to show your working.]

Algebra and Ratio - Fluency

1. Find the value of x: x + 5 = 12

2. What is 3n if n = 6?

3. Write a formula for the rule: multiply by 4 then add 3.

4. What is the next number in the sequence: 2, 4, 6, 8, ___?

5. Find the value of x: 2x = 18

6. What is the missing number: ___ + 7 = 13?

7. Solve: n - 3 = 5

8. Write an expression for: double a number then subtract 1

9. If a = 5 and b = 3, what is ab?

10. Complete the pattern: 5, 10, 20, 40, ___

[Use the space below to show your working.]

Algebra and Ratio - Reasoning

1. If n = 4, what is the value of 2n + 3?

2. The sequence increases by 6: 4, 10, ____, ____

3. Write the rule for this sequence: 3, 7, 11, 15...

4. Solve: 3x + 5 = 20

5. A recipe uses flour and sugar in the ratio 2:3. If there are 6 cups of sugar, how much flour?

6. Use a formula to find the total cost: £5 per ticket, t tickets.

7. Explain the pattern: 81, 27, 9, ____, ____

8. Solve the equation: 2(x - 3) = 10

9. If a number is doubled then 5 is subtracted and the result is 19, what is the number?

10. Circle the statements that describe linear sequences.

[Use the space below to show your working.]

Algebra and Ratio - Problem Solving

1. Sam has 3 times as many sweets as Tom. Together they have 48. How many does each have?

2. Solve: $4x - 5 = 31$

3. A school has boys and girls in ratio 5:3. If there are 120 pupils, how many girls?

4. Write a word problem for: $x + 12 = 30$

5. A car rental costs £40 plus £5 per day. Write and use a formula for 6 days.

6. The perimeter of a square is 4x cm. If one side is 6cm, find x.

7. A garden has length 3x and width x. The area is 75m^2. Find x.

8. Complete the missing terms in the pattern: 2, 4, __, 16, __

9. In a puzzle, a number is tripled and reduced by 4 to get 20. What is the number?

10. Draw a number machine for: multiply by 5, subtract 2.

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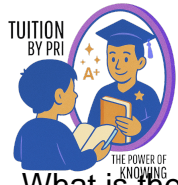
1. What is the perimeter of a rectangle 7cm by 3cm?

2. Convert 3.5kg to grams.

3. Find the area of a square with side 5cm.

4. How many ml in 2 litres?

5. A cuboid has sides 2cm x 3cm x 4cm. What is the volume?

6. Convert 120cm to metres.

7. What is the area of a triangle with base 8cm and height 6cm?

8. How many mm in 6.5cm?

9. Find the volume of a cube with 4cm sides.

10. Convert 2.25L to ml.
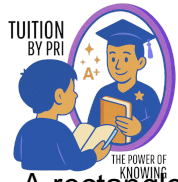
[Use the space below to show your working.]

1. A rectangle has area 56cm^2 and width 7cm. Find its length.

2. Explain how to convert 3.6kg to grams.

3. A swimming pool is 25m long and 10m wide. What is its area?

4. A jug contains 2L of juice. 750ml is poured out. How much remains?

5. A shape has a perimeter of 30cm. If one side is 10cm, what could the shape be?

6. Convert 1.8m to cm and explain your method.

7. Find the missing dimension: area = 48cm^2, width = 6cm.

8. A cuboid has volume 120cm^3. If base = 5cm x 3cm, find height.

9. Explain how to find the perimeter of a regular hexagon.

10. A parcel weighs 2.4kg. How many 600g items can you fit without going over?
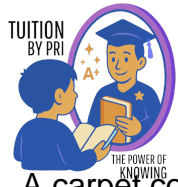
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1. A carpet covers 4m x 6m. What is the area? How much will it cost at £12 per m^2?

2. A garden is 12m by 9m. A patio of 3m by 3m is added. What's the new area?

3. Find the length of fencing needed for a 5m by 8m rectangular garden.

4. A container holds 2.5L. If each glass holds 200ml, how many full glasses?

5. Sam pours 1.2L of water into a tank. The tank holds 3L. How much more is needed?

6. A pool is 8m by 6m by 1.5m. Find the volume of water it holds.

7. If 1m^2 of paint covers 3m^2 of wall, how many tins needed for 24m^2?

8. A box is 10cm x 5cm x 2cm. Find its surface area.

9. A cube has volume 64cm^3. What is the side length?

10. Write a problem involving area and perimeter and solve it.

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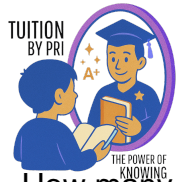
Geometry: Shapes and Angles - Fluency

1. How many sides does a hexagon have?

2. What is the sum of angles in a triangle?

3. What is a right angle in degrees?

4. How many vertices in a cube?

5. What do we call a 7-sided shape?

6. How many lines of symmetry does a square have?

7. Draw a parallelogram.

8. Identify an isosceles triangle.

9. What is the name of a 3D shape with a circular base and one vertex?

10. How many faces does a cuboid have?

[Use the space below to show your working.]

Geometry: Shapes and Angles - Reasoning

1. Explain why all angles in a square are equal.

2. A triangle has angles 70° and 60°. Find the third angle.

3. A shape has one line of symmetry. Draw it.

4. A shape is rotated 90°. What changes?

5. Find the missing angle on a straight line if one is 135°.

6. How many right angles in a rectangle?

7. Which 3D shape has no edges?

8. A regular pentagon has all angles equal. What is one angle?

9. Name 3 shapes with perpendicular sides.

10. What does congruent mean?

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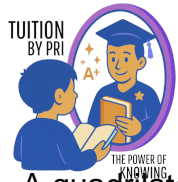
Geometry: Shapes and Angles - Problem Solving

1. A quadrilateral has angles 90°, 85°, 95°. Find the fourth angle.

2. Draw a triangle with two equal sides and one 90° angle.

3. Design a net for a cube.

4. A rectangle has a length twice the width. Its perimeter is 36cm. Find its dimensions.

5. Rotate a shape 180° and describe what stays the same.

6. A hexagon has a perimeter of 60cm. What is one side?

7. Draw a shape with 2 lines of symmetry.

8. Find missing angle inside a triangle with 2 known angles.

9. Match shapes to their properties: cube, cylinder, sphere.

10. A classroom table is in the shape of a trapezium. Draw and label it.

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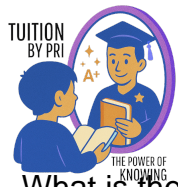
Statistics and Data Interpretation - Fluency

1. What is the mode of: 3, 5, 5, 7, 8?

2. Find the mean of: 6, 10, 4, 8

3. What is the median of: 12, 9, 15, 11, 10?

4. What is the range of: 20, 24, 18, 30?

5. A bar chart shows 5 apples, 7 bananas, and 3 pears. How many total?

6. Tally: 1, 2, 2, 3, 3, 3, 4

7. What does each interval on this pictogram represent if 2 pictures = 10 items?

8. Plot the point (4, 2) on a graph.

9. Interpret the scale on a bar graph with intervals of 2.

10. Read the value from a bar at 25 on a vertical axis.

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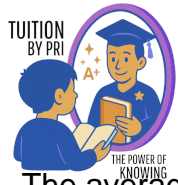
Statistics and Data Interpretation - Reasoning

1. The average of 4 numbers is 6. Three numbers are 5, 7, 6. What is the fourth?

2. A line graph shows temperature rising from 8°C to 18°C over 4 hours. By how much did it increase each hour?

3. In a survey, 8 out of 20 students chose red. What percentage is this?

4. A bar chart shows book sales. Monday: 5, Tuesday: 8, Wednesday: 6. What is the total?

5. Explain how to find the mean from a table of values.

6. A pictogram shows 4 symbols, each for 5 people. How many people in total?

7. From the table, how many students prefer football if 15% selected it?

8. Draw conclusions from a line graph showing rainfall over a week.

9. A class votes: 10 like cats, 12 like dogs, 8 like birds. What fraction like dogs?

10. A graph shows sales rising each month. In which month were sales highest?

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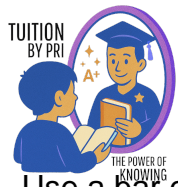
Statistics and Data Interpretation - Problem Solving

1. Use a bar chart to compare how many more students chose swimming than running.

2. Complete the missing data: Mean = 10, values = 8, 9, __, 13

3. A table shows scores of 5 students. Who scored above the average?

4. Construct a line graph to show temperature changes: Mon 10°C, Tue 13°C, Wed 15°C

5. Interpret a pie chart where each section represents 25 students.

6. A chart shows toy sales: cars 30, dolls 25, puzzles 20. What is the difference between highest and lowest?

7. Use a tally chart to record scores of 10 dice rolls.

8. If 20% of students travel by bike and there are 120 students, how many use bikes?

9. Compare data sets with same mean but different ranges.

10. Write a question that can be answered using a bar chart and answer it.

[Use the space below to show your working.]

Mixed Word Problems - Fluency

1. Jake buys 3 apples at 40p each. How much does he spend?

2. A pencil costs £1.25. How much do 4 pencils cost?

3. A packet contains 10 biscuits. Sam eats 3. How many are left?

4. Lily saves £2 each week. How much in 5 weeks?

5. A jug holds 2L. How many ml is that?

6. Emma reads 5 pages a day for 6 days. How many pages?

7. A shape has 4 equal sides of 6cm. What is the perimeter?

8. If a toy costs £12 and you pay with £20, what is your change?

9. Divide 36 stickers equally between 4 children.

10. A train journey takes 3 hours. If it starts at 10:30am, when does it end?

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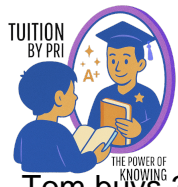
Mixed Word Problems - Reasoning

1. Tom buys 3 books for £4.75 each. Does he have enough if he has £15?

2. A chocolate bar weighs 250g. What is the total weight of 6 bars?

3. A rectangle is 5cm wide and has area 35cm^2. What is the length?

4. If 2/5 of a class are boys and there are 30 pupils, how many girls?

5. A car travels 180 miles in 3 hours. What is the average speed?

6. Rosie saves £5.25 per week. How much after 8 weeks?

7. There are 24 legs in total. How many dogs are there?

8. A baker uses 3/4 of 1kg of flour. How much is left?

9. Write a word problem using the numbers 8, 4, and 2.

10. A square has perimeter 32cm. What is the length of one side?

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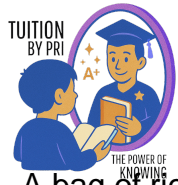
Mixed Word Problems - Problem Solving

1. A bag of rice weighs 2.5kg. How many 500g portions can you make?

2. A pizza is cut into 8 slices. Sam eats 3 and Amy eats 2. What fraction remains?

3. Jack walks 1.6km to school and back each day. How far in 5 days?

4. A toy costs £13.49. If you buy 3, how much change from £50?

5. A jug holds 1.2L. How many 200ml cups can be filled?

6. A ribbon is 2.4m long. It is cut into 8 equal parts. How long is each?

7. A cube has volume 125cm^3. What is the length of one side?

8. A shop sells pens in packs of 6. You need 52 pens. How many packs?

9. A graph shows temperatures across the week. On which day was it coldest?

10. Write a two-step problem using multiplication and subtraction.

[Use the space below to show your working.]