YEAR 7 | MYP-INSPIRED DIAGNOSTIC

Mathematics

Name: _____ Date: _____

Suggested time: 50 minutes | Focus: A Knowing and understanding; B Investigating patterns; C Communicating; D Applying mathematics in real-life contexts

Instructions: Answer independently. Explain your thinking, refer to evidence and show working where appropriate. This is an unofficial diagnostic, not an IB examination.

Number and algebra

1. Calculate 3/4 + 5/8. Show your method and simplify.

2. Solve 4(2x - 3) = 28. Check your answer by substitution.

3. A jacket costs £48 and is reduced by 15%. Find the sale price and explain your calculation.

Patterns and communication

4. A tile pattern uses 5, 8, 11, 14 tiles for figures 1 to 4. Create a rule for figure n, explain why it works and predict figure 20.

5. A rectangle has perimeter 46 cm. Its length is 5 cm more than its width. Find both dimensions, showing your reasoning.

Real-world modelling

6. A school trip charges £90 for a coach plus £6 per student. Tickets are £12 each. Write an expression for the profit with n students. Find the minimum whole number of students needed to make a profit. State one limitation of the model.

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PARENT / TUTOR GUIDE

Use this guide after the student has completed the assessment. Credit sound reasoning and justified alternative responses. These are formative observations, not official MYP criterion levels.

Assessment lens

A Knowing and understanding; B Investigating patterns; C Communicating; D Applying mathematics in real-life contexts

Answers 1-3

1: 11/8 or 1 3/8. 2: x = 5. 3: £40.80 (15% of £48 is £7.20).

Answers 4-6

4: 3n + 2; figure 20 uses 62 tiles. 5: width 9 cm, length 14 cm. 6: profit = 12n - (90 + 6n) = 6n - 90; profit begins at 16 students. Limitations include capacity, unsold tickets or other costs.

Look for

Accurate arithmetic, symbolic generalisation, labelled units, a checked solution and justified modelling assumptions.

Observation checklist

Does the student explain reasoning clearly? Can they select relevant evidence, revise a first idea and communicate a conclusion? Note specific examples rather than assigning an unsupported IB grade.

Next steps

Choose one strength and one priority for the next lesson. Ask the student to explain how they reached their answer before providing corrections.

Curriculum note

The MYP uses subject-specific criteria A-D. This independent diagnostic samples related skills; it does not fully assess all strands or replace school assessment. Year 7 is commonly MYP Year 1, but school year naming varies.

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