The Theorem of Pythagoras (Grade 8)

EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
28	45 minutes	3

Name: _____ Class: _____

Date: _____

MARK ____ / 28

INSTRUCTIONS AND INFORMATION

1. Answer **ALL** the questions in this question paper.
2. Answer QUESTION 1 by **circling** the letter (A–D) in the answer grid at the end of that section.
3. Show **ALL** calculations clearly.
4. Show all units where applicable.
5. Number the answers correctly according to the numbering system used in this question paper.
6. A non-programmable calculator may be used, unless stated otherwise.
7. Write neatly and legibly.

QUESTION 1 [10 MARKS]

Four options are given as possible answers to the following questions. Choose the correct answer and circle the letter (A–D) in the grid at the end of this section. If you want to change your choice, put a cross through the wrong letter and circle your new choice.

1.1 In a right-angled triangle, the longest side is called the ... (1)

A) perpendicular **B)** hypotenuse
C) height **D)** base

1.2 A right-angled triangle has legs of 9 cm and 12 cm. Its hypotenuse is ... (1)

A) 21 cm **B)** 225 cm
C) 10,5 cm **D)** 15 cm

1.3 A right-angled triangle has a hypotenuse of 13 cm and one leg of 5 cm. The other leg is ... (1)

A) 8 cm **B)** 18 cm
C) 194 cm **D)** 12 cm

1.4 Which set of lengths forms a right-angled triangle? (1)

A) 8 ; 15 ; 17 **B)** 5 ; 6 ; 7
C) 4 ; 5 ; 6 **D)** 3 ; 4 ; 6

1.5 To find a SHORTER side of a right-angled triangle you ... (1)

A) subtract the sides **B)** add the squares
C) add the sides **D)** SUBTRACT the squares

1.6 A ladder 10 m long leans against a wall with its foot 6 m from the wall. It reaches ... up the wall. (1)

A) 4 m **B)** 16 m
C) 8 m **D)** 11,66 m

1.7 The theorem of Pythagoras applies ONLY to ... (1)

A) all triangles **B)** equilateral triangles

C) right-angled triangles **D)** isosceles triangles

1.8 A rectangle is 8 cm by 15 cm. Its DIAGONAL is ... (1)

A) 23 cm **B)** 17 cm

C) 120 cm **D)** $11{,}5$ cm

1.9 In $\triangle ABC$, $AB = 6$, $BC = 8$ and $AC = 10$. The right angle is at ... (1)

A) B **B)** C

C) there is none **D)** A

1.10 For the 9-12-15 triangle, the AREA is ... (1)

A) 108 cm^2 **B)** $67{,}5$ cm^2

C) 54 cm^2 **D)** 36 cm^2

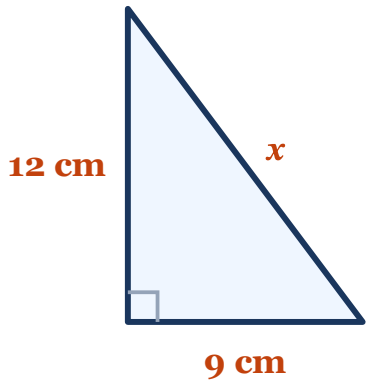
ANSWER GRID — CIRCLE YOUR ANSWERS FOR QUESTION 1

1.1	A	B	C	D
1.2	A	B	C	D
1.3	A	B	C	D
1.4	A	B	C	D
1.5	A	B	C	D
1.6	A	B	C	D
1.7	A	B	C	D
1.8	A	B	C	D
1.9	A	B	C	D
1.10	A	B	C	D

QUESTION 2

[10 MARKS]

In the right-angled triangle below, two sides are given.



2.1 Write down the theorem of Pythagoras for this triangle, and explain what each of the squares in the statement represents. **(3)**

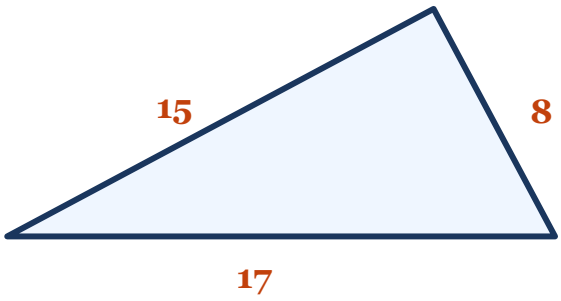
2.2 Hence calculate x. **(3)**

2.3 Explain how you know x must be the longest side, and hence calculate the perimeter and the area of the triangle. **(4)**

QUESTION 3

[8 MARKS]

A triangle has sides of 8 cm, 15 cm and 17 cm.



3.1 Show, by calculation, whether this triangle is right-angled. **(4)**

3.2 Where in the triangle is the right angle? Give a reason, calculate the area of the triangle, and then show that a triangle with sides 8 cm, 15 cm and 18 cm is NOT right-angled. **(4)**

TOTAL: 28 marks

This question paper consists of 3 questions.

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