GRADE 10 · TRIGONOMETRY

Trig Ratios for Any Angle: CAST & Reference Angles (Grade 10)

EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
33	50 minutes	3

Name: ..... Class: .....

Date: .....

MARK ____ / 33

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 $305°$ lies in ... (1)

A) the first quadrant
B) the second quadrant
C) the fourth quadrant
D) the third quadrant

1.2 The reference angle for $210°$ is ... (1)

A) $60°$
B) $30°$
C) $150°$
D) $210°$

1.3 $\cos 120° = ...$ (1)

A) $-\frac{1}{2}$
B) $\frac{1}{2}$
C) $-\frac{\sqrt{3}}{2}$
D) $\frac{\sqrt{3}}{2}$

1.4 $\sin\theta < 0$ and $\cos\theta > 0$ in ... (1)

A) the first quadrant
B) the second quadrant
C) the third quadrant
D) the fourth quadrant

1.5 $P(-3\ ;\ 4)$ lies on the terminal arm of θ. Then $\cos\theta = ...$ (1)

A) $\frac{4}{5}$
B) $-\frac{4}{3}$
C) $-\frac{3}{5}$
D) $\frac{3}{5}$

1.6 tan $225° = ...$ (1)

A) -1 **B)** 1

C) $\sqrt{3}$ **D)** 0

1.7 If $\sin\theta = \frac{12}{13}$ and θ is obtuse, then $\cos\theta = ...$ (1)

A) $-\frac{5}{13}$ **B)** $\frac{5}{13}$

C) $-\frac{12}{5}$ **D)** $\frac{5}{12}$

1.8 cosec $30° = ...$ (1)

A) $\frac{1}{2}$ **B)** $\frac{2}{\sqrt{3}}$

C) $\sqrt{3}$ **D)** 2

1.9 sec θ is undefined when $\theta = ...$ (1)

A) $0°$ **B)** $180°$

C) $90°$ **D)** $45°$

1.10 $\sin 330° + \cos 240° = ...$ (1)

A) 0 **B)** -1

C) 1 **D)** $-\sqrt{3}$

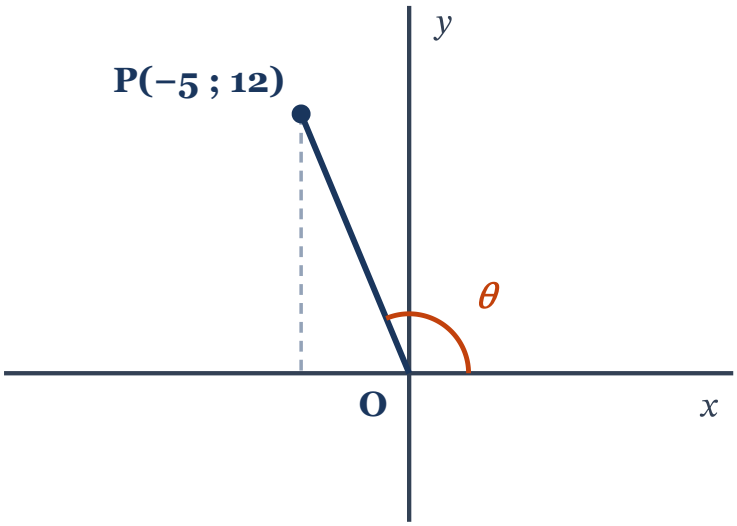
ANSWER GRID — CIRCLE YOUR ANSWERS FOR QUESTION 1

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]

P$(-5\ ;\ 12)$ lies on the terminal arm of θ, as shown in the diagram below.



2.1 Calculate the length of OP. **(2)**

2.2 Write down the values of sin θ, cos θ and tan θ. **(3)**

2.3 Determine the value of cosec $\theta + \cot \theta$. **(3)**

2.4 Explain, without using a calculator, why $90° < \theta < 180°$. **(2)**

QUESTION 3 [13 MARKS]

Answer the following WITHOUT using a calculator.

3.1 Evaluate $\frac{\sin 210° \times \cos 330°}{\tan 135°}$. **(5)**

3.2 If $13\cos\theta + 5 = 0$ and $180° < \theta < 360°$, determine the value of $\sin\theta + \tan\theta$. **(5)**

3.3 Explain why $\text{cosec}\ 180°$ is undefined. **(3)**

TOTAL: 33 marks

This question paper consists of 3 questions.

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