KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GRADE 10
TERM 1 2026

MATHEMATICS

INFORMAL TEST: Trigonometry

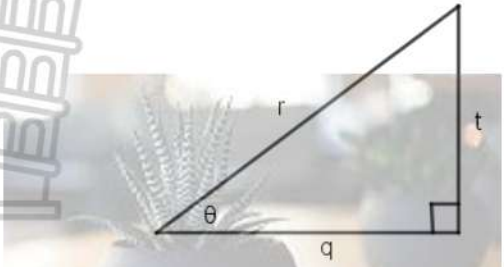
MARKS: 25

DURATION: 30 minutes

This paper consists of 2 pages including the cover page.

QUESTION 1

1.1 Use the diagram below to determine the following in terms of t, q and r.



1.1.1 $\sin\theta$ (1)

1.1.2 $\tan\theta$ (1)

1.1.3 $\sec\theta$ (1)

1.1.4 $\dfrac{1}{\text{cosec}\,\theta}$ (2)

1.1.5 $\cos(90° - \theta)$ (1)

1.2 Given that $A = 60°$ and $B = 20°$, determine the numerical values of the following, rounding off to TWO decimal places.

1.2.1 $\sin(A+B)$ (2)

1.2.2 $\text{cosec}(A - B)$ (2)

[10]

QUESTION 2

2.1 Given that $\tan x = -\dfrac{4}{5}$ and $90° < x < 270°$, determine with the aid of a diagram and WITHOUT using a calculator, the value of :

2.1.1 $\cos x$ (3)

2.1.2 $5\sec^2 x$ (3)

2.2 Simplify: (5)

$$\frac{\sin 30°.\cos^2 60°}{\sec 45°.\tan 30°}$$

2.3 Solve for x if : (4)

$12\sin(x+10°) - 5 = 0$

[15]

TOTAL: 25

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Marking guidelines

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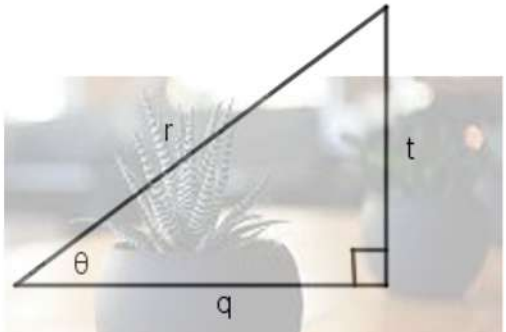
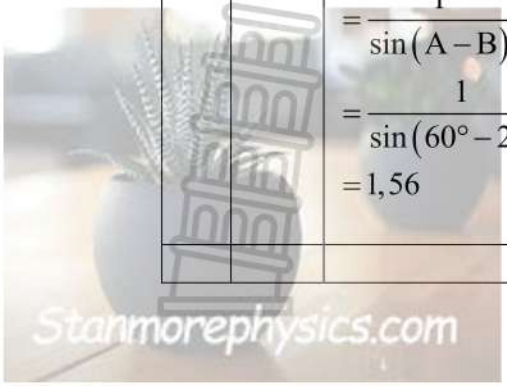
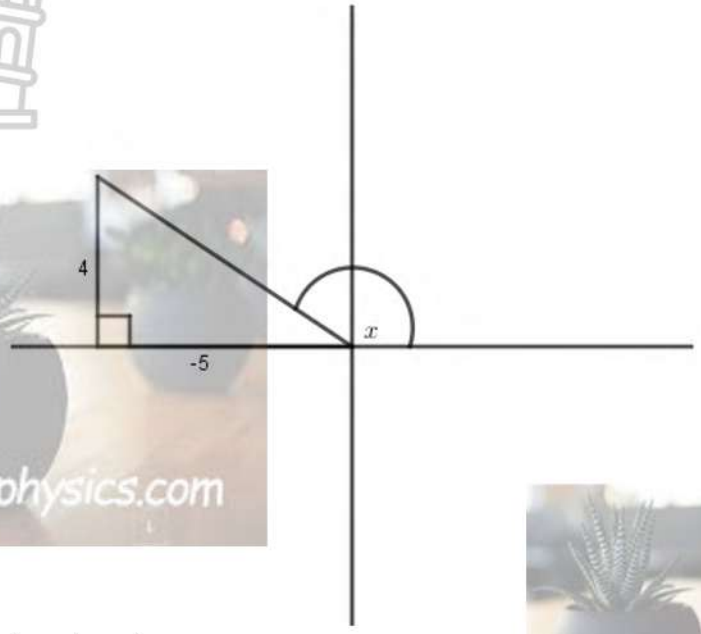
QUESTION 1				
1.1				
				
	1.1.1	$\sin\theta = \frac{t}{r}$	✓Answer	(1)
	1.1.2	$\tan\theta = \frac{t}{q}$	✓Answer	(1)
	1.1.3	$\sec\theta = \frac{r}{q}$	✓Answer	(1)
	1.1.4	$\frac{1}{\text{cosec}\,\theta} = \frac{1}{\frac{r}{t}}$ $= \frac{t}{r}$ OR $= \sin\theta$ $= \frac{t}{r}$	✓Substitution of $\text{cosec}\,\theta$ ✓Answer OR ✓ $\sin\theta$ ✓Answer	(2)
	1.1.5	$\cos(90° - \theta) = \frac{t}{r}$	✓Answer	(1)
1.2	$A = 60°$ and $B = 20°$			
	1.2.1	$\sin(A+B)$ $= \sin(60°+20°)$ $= 0,98$	✓Substitution ✓Answer	(2)
	1.2.2	$\text{cosec}(A-B)$	✓ $= \frac{1}{\sin(A-B)}$	

		$= \frac{1}{\sin(A-B)}$ $= \frac{1}{\sin(60° - 20°)}$ $= 1,56$	✓Answer	(2)
				[10]



QUESTION 2

2.1	$\tan x = -\frac{4}{5}$ and $90° < x < 270°$,  $r^2 = x^2 + y^2$ $r^2 = (-5)^2 + (4)^2$ $r = \sqrt{41}$			
	2.1.1	$\cos x = \frac{-5}{\sqrt{41}}$	✓Correct diagram ✓$r = \sqrt{41}$ ✓Answer	(3)
	2.1.2	$5\sec^2 x = 5\left(\frac{\sqrt{41}}{-5}\right)^2$ $= \frac{41}{5}$	✓$\frac{\sqrt{41}}{-5}$ ✓Correct substitution ✓Answer	(3)
2.2	$\frac{\sin 30°.\cos^2 60°}{\sec 45°.\tan 30°}$ $= \frac{\left(\frac{1}{2}\right).\left(\frac{1}{2}\right)^2}{\sqrt{2}.\frac{1}{\sqrt{3}}}$ $= \frac{\sqrt{6}}{16}$		✓$\sin 30° = \frac{1}{2}$ ✓$\cos 60° = \frac{1}{2}$ ✓$\sec 45° = \sqrt{2}$ ✓$\tan 30° = \frac{1}{\sqrt{3}}$ ✓Answer	(5)

2.3	$12\sin(x+10°)-5=0$ $\sin(x+10°)=\frac{5}{12}$ $(x+10°)=\sin^{-1}\left(\frac{5}{12}\right)$ $x+10°=24,62°$ $x=14,62°$	✓ $\sin(x+10°)=\frac{5}{12}$ ✓ $(x+10°)=\sin^{-1}\left(\frac{5}{12}\right)$ ✓ $x+10°=24,62°$ ✓Answer	(4)
			[15]
			TOTAL: 25