WORKSHEET

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

Date: .....

MARK ____ / 23

Answer all questions. Show all your working — marks are awarded for method as well as the final answer.

1 Simplify $\sin\theta \cdot \tan\theta \cdot \cos\theta$, and state the restriction on θ. *(simplify)* **(3)**

2 Simplify $(1 - \sin^2\theta)$. *(identity)* **(1)**

3 Simplify $\dfrac{\cos^2\theta}{1 - \sin^2\theta}$. *(identity)* **(2)**

4 Prove $\tan\theta \cdot \cos\theta = \sin\theta$, and say where the identity does not hold. *(prove)* **(3)**

5 In which quadrant are only sine positive? *(CAST)* (1)

6 $\sin\theta = 0{,}5$, θ in Q2. Is $\cos\theta$ + or −? *(CAST)* (1)

7 Simplify $\cos(180° - \theta)$. *(reduction)* (1)

8 Simplify $\sin(360° - \theta)$. *(reduction)* (1)

9 Exact value of $\sin 150°$. *(exact)* (2)

10 Exact value of $\cos 210°$. *(exact)* (2)

11 For which values of θ is $\tan\theta$ undefined? Give the general answer. **(2)**

12 For $\theta \in [0° ; 360°]$, state the values for which $\frac{\sin\theta \times \tan\theta}{\cos\theta}$ is undefined. **(2)**

13 Explain why the restriction must be read off the ORIGINAL expression and not the simplified one. **(2)**

TOTAL: 23 marks

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