Small Angle Approximations

 

Example

When $θ$ is small, find the approximate value of:

1. $\frac{\sin(2θ)+\tan(θ)}{2θ}$
2. $\frac{\cos(4θ)-1}{θ\sin(2θ)}$

Example

a) Show that, when $θ$ is small,
$$\sin(5θ)+\tan(2θ)-\cos(2θ)≈2θ^{2}+7θ-1$$

b) Hence state the approximate value of
$\sin(5θ)+\tan(2θ)-\cos(2θ)$ for small values of $θ$.

Ex 5F Pg 134