Name:
Result:

**1.** *(3 points)*

You are given the following quantities: $x = 300$, $\alpha = 10°$, $y = 2000$ and $z = 0.023$. Given that $x$ and $\alpha$ are rounded to 1 significant figure and $y$ and $z$ are rounded to 2 significant figures, find the range of possible values of $W$, where:

$$W = \frac{y \cdot \tan \alpha}{z} - x$$

**2.** *(7 points)*

Two particles start moving from the same point at the same time. The angle between their paths was measured to be 30° (correct to the nearest degree). The speeds of the particles were measured to be 5 $\frac{m}{s}$ and 7 $\frac{m}{s}$ (correct to 1 s.f.) respectively.

(a) Use the above measurements to calculate the distance between the two particles after exactly 4 $s$. Give your answer in $cm$ correct to 3 significant figures and in the standard form. [3]

(b) Find the maximal percentage error of your answer to part (a). [4]