Worksheet rotation: angular kinematics

**1.** A Scyther flies in a circular path for 2.25 revolutions for no apparent reason.

What is the Scyther's angular displacement in degrees and radians?

**2.** If you have a perfectly circular pumpkin pie, and you cut out a piece that is 12.5% of the pie leaving behind the remaining 87.5% of the pie. A gnat now walks across the outer crust of your slice of pie. What is the gnat's angular displacement in radians?

**3.** Two balls are thrown into the air, a baseball and a tennis ball. The baseball has a constant angular velocity, and rotates through 50 revolutions in half a minute. The tennis ball's angular displacement can be described as the function: $θ=\sin(\left(0.3t^{3}+2t\right))+4t^{2}$

After half a minute has gone by, what ball is rotating faster? How much faster?