Problems of the Month

Summer 2018

General Problem:

At Toad Suck Daze, there are three vendors that sell kettle corn. Which one is the best deal?

- Vendor A sells 3.7 liters for $8
- Vendor B sells 2.5 liters for $4 and 5 liters for $8
- Vendor C sells 3 liters for $6 and 5 liters for $10

Calculus Problem:

A parametric curve in three dimensions is given by $p(t) = \langle 2 + 3t, 1 - 4t^2, -4 + 3t \rangle$ where t ranges from 1 to 6. A fly follows the path given by the curve exactly, and gets from one side to the other in 4 seconds. If its velocity is constant, how fast is the fly moving?

Challenge Problem:

Consider the hour hand and the seconds hand on an analog clock. How many times will the seconds hand pass the hour hand in the 12 hours between 1am and 1pm? Give a breif justification for your answer.