Algebra and trigonometry can be used to solve problems in which objects move at a constant rate of speed. Calculus was invented in the $17^{\text {th }}$ century as a tool for investigating problems that involve motion where objects move at varied speeds or follow irregular paths. Decide whether the following problems need calculus to solve them. If only precalculus skills are required, solve the problem.

1. Find the area of the triangle which has sides that measure $10 \mathrm{~m}, 14 \mathrm{~m}$ and 18 m . Approximate your result to the nearest tenth.
2. The edges of a cube are expanding at a rate of 3 cm per second. Find the rate of change of the volume when the sides measure exactly 5 cm .
3. Find the equation of the line secant to the graph of $f(x)=-x^{2}+2$ at $x=1$ and $x=2$.
4. Find the area between the graphs of $f(x)=\cos x$ and $g(x)=\sin x$.
