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Solid angle subtended by simple planar shapes along fixed axes BHARATH THOTAKURA, Wayne State University — We investigated the solid angle subtended by various planar shapes when viewed from a fixed height along either an axis of symmetry or an offset axis. In particular, we were able to find analytic formulas for the solid angle of a circle, triangle, and ellipse. We also show the generalization of the solid angle of a triangle into the solid angle of an arbitrary regular polygon. The calculation of the solid angle has wide ranging applications in physics, and as examples, we show the relationship between the solid angle and the magnetic field of a planar current carrying loop of wire, and Gauss's Law for electric flux.

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