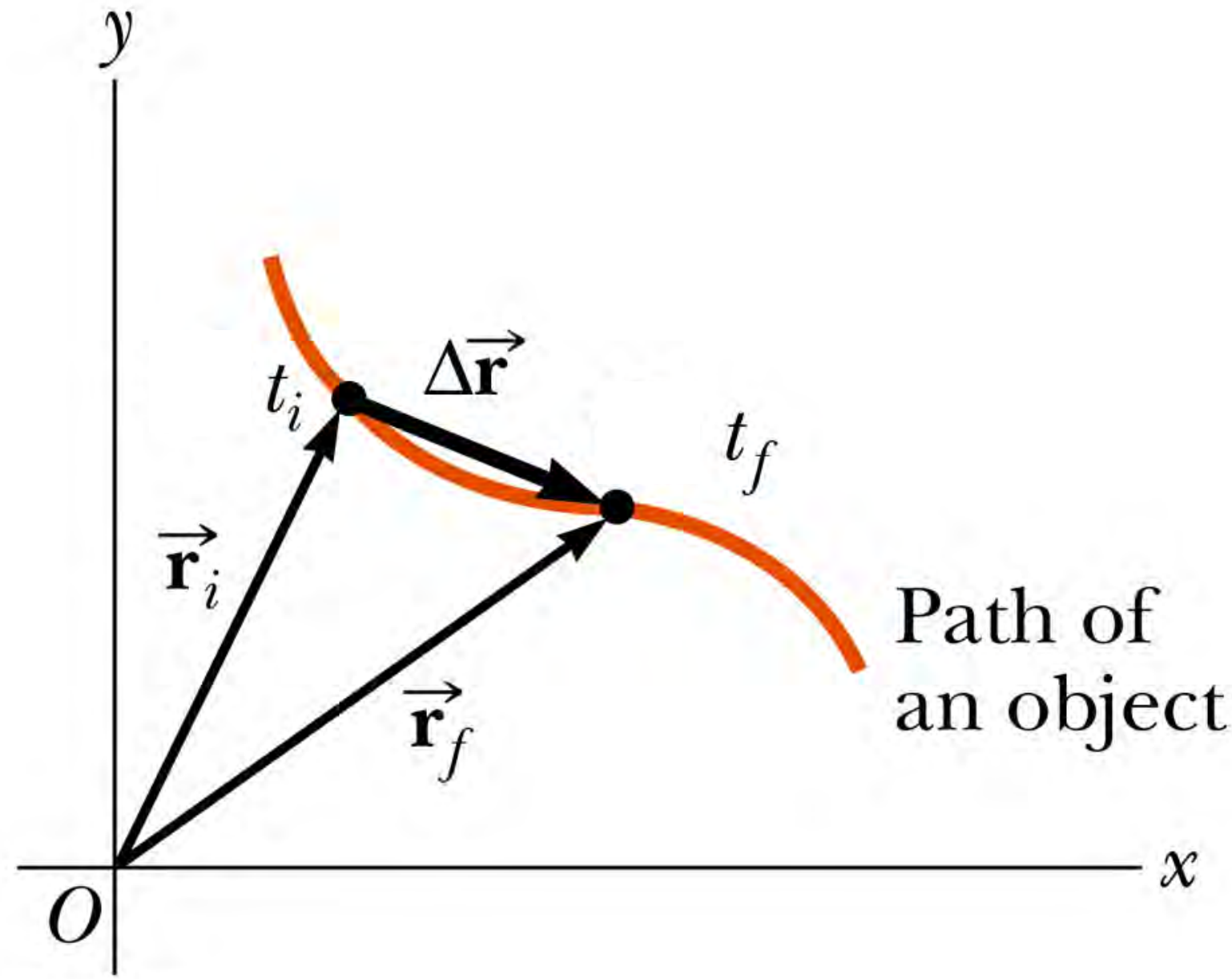
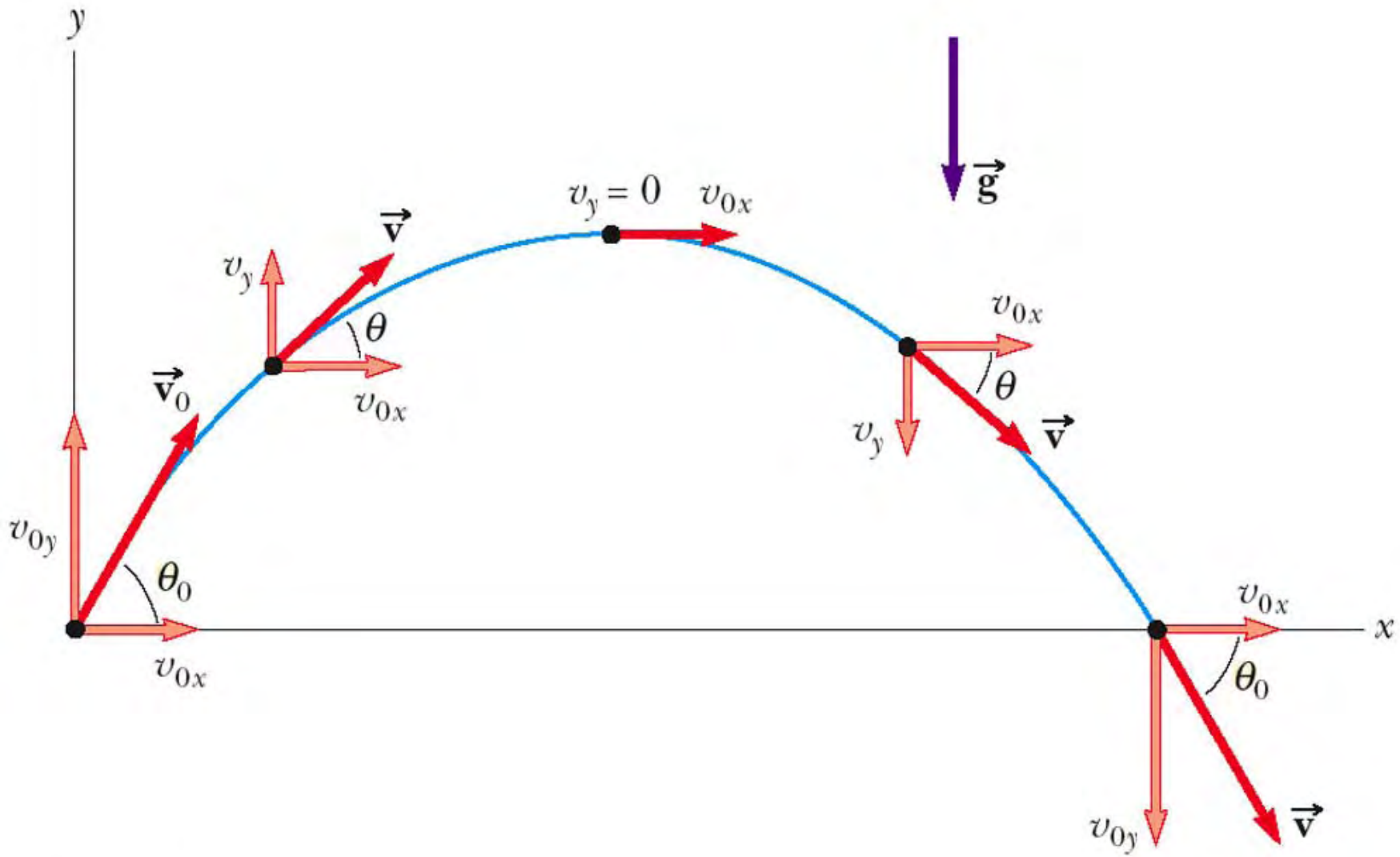
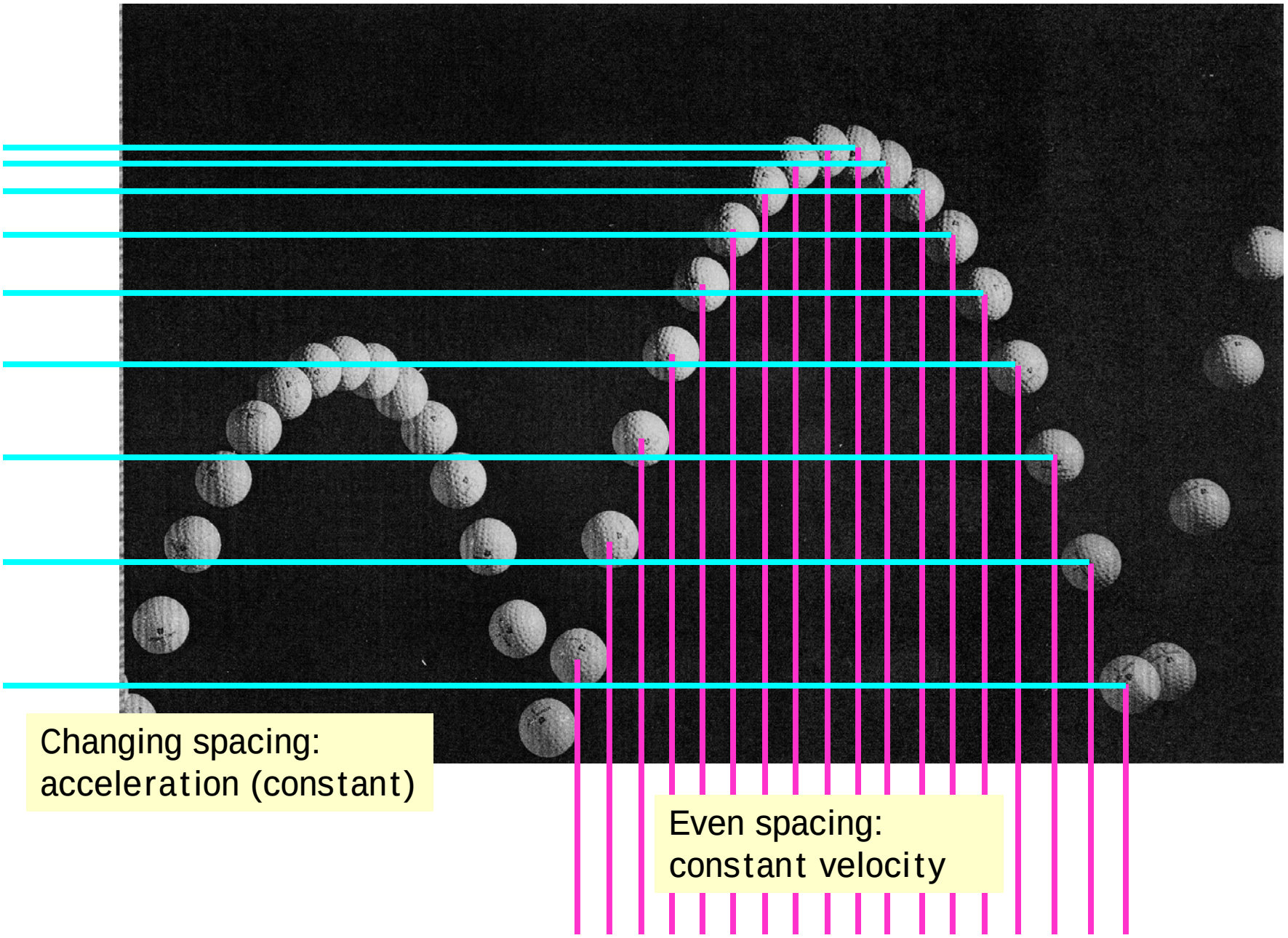
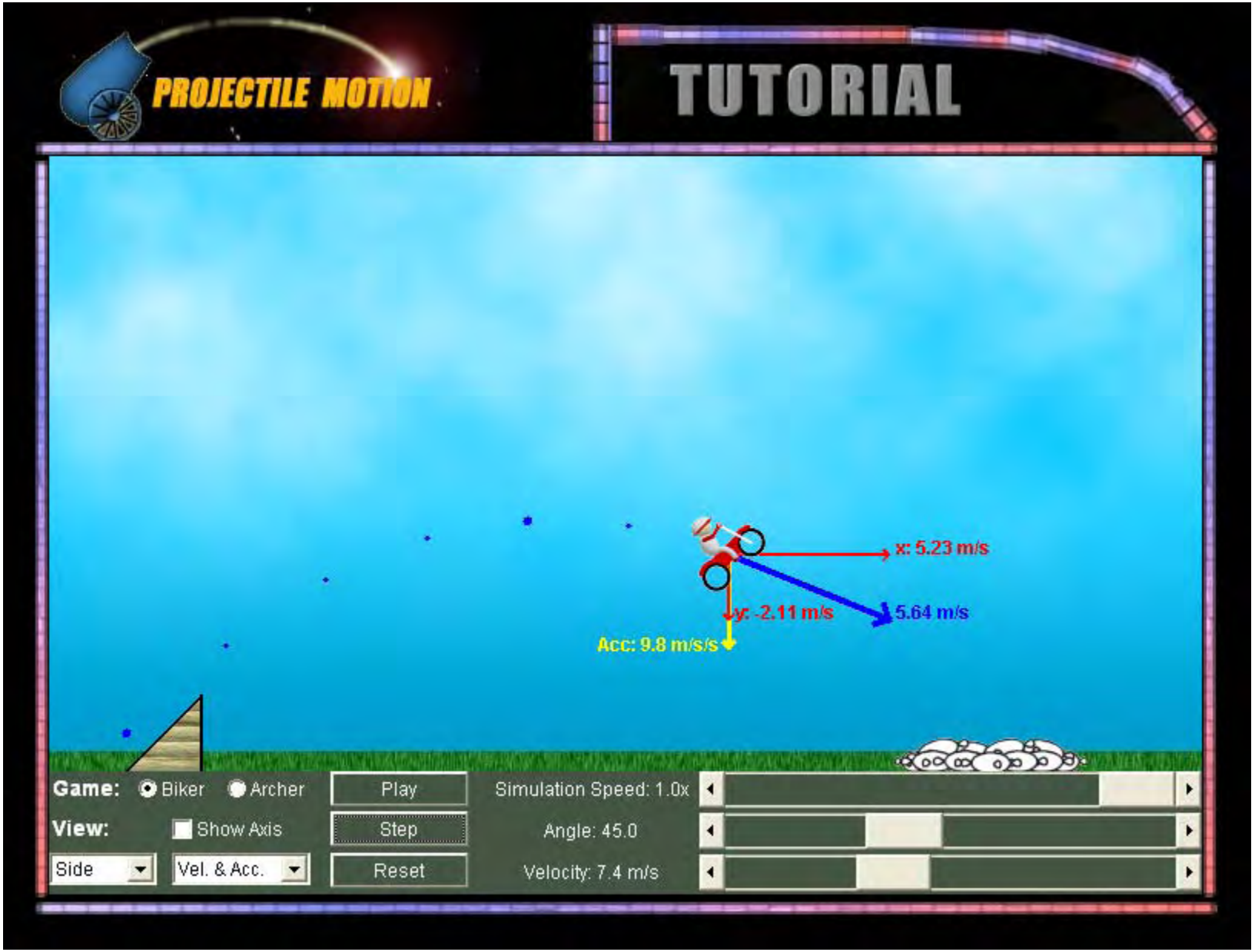
Motion in Two Dimensions





Harold Edgerton – Gold Ball Bounce





http://www.mhhe.com/physsci/physical/giambattista/proj/projectile.html

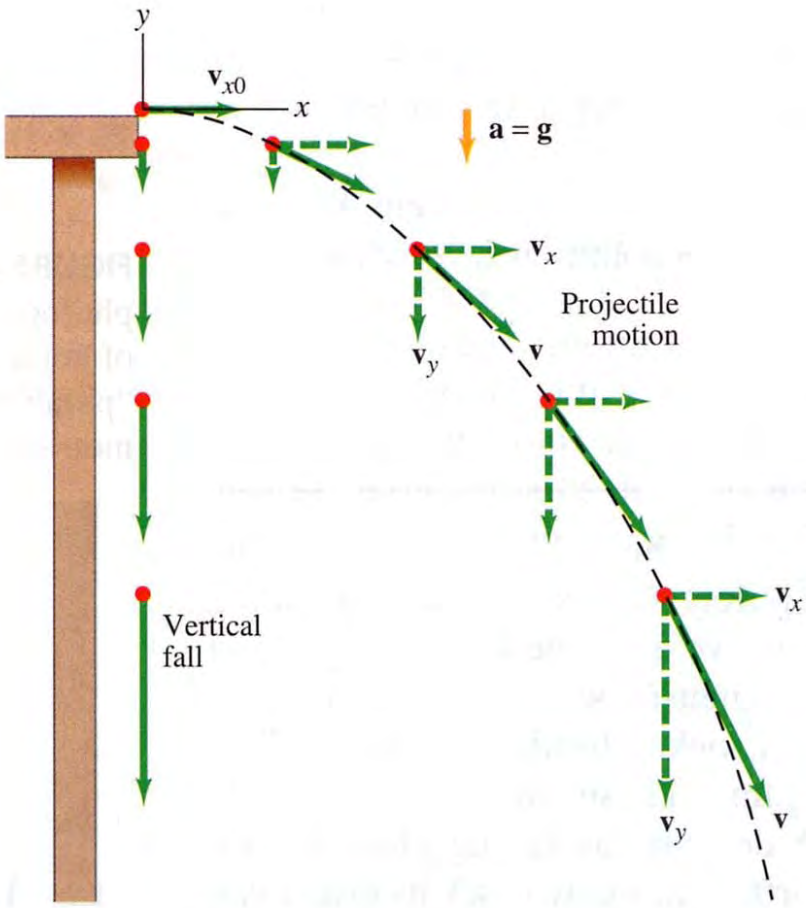


FIGURE 3–20 Projectile motion. (A vertically falling object is shown at the left for comparison.)

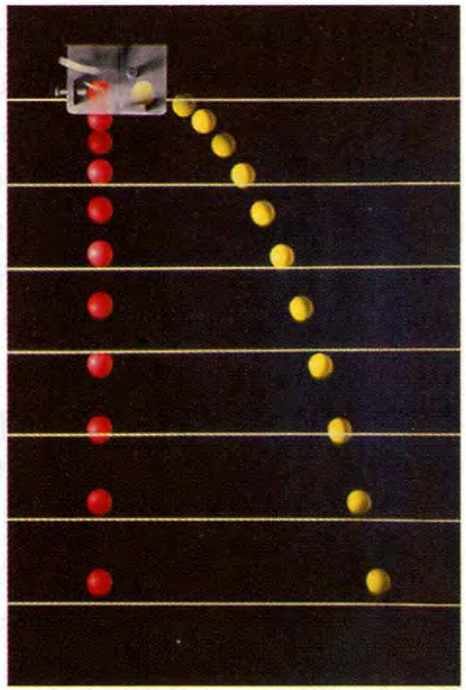
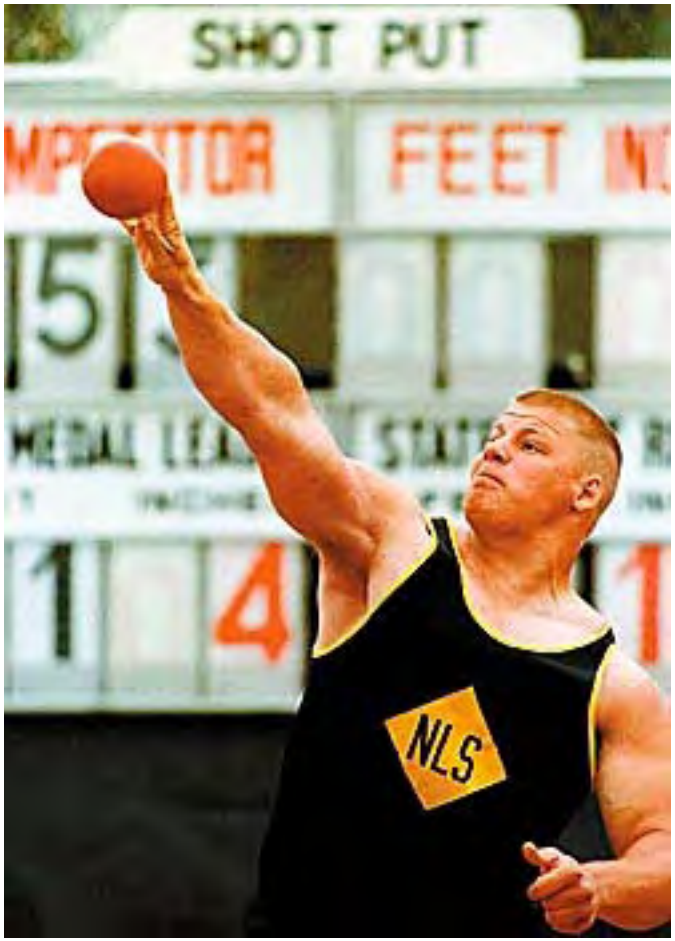
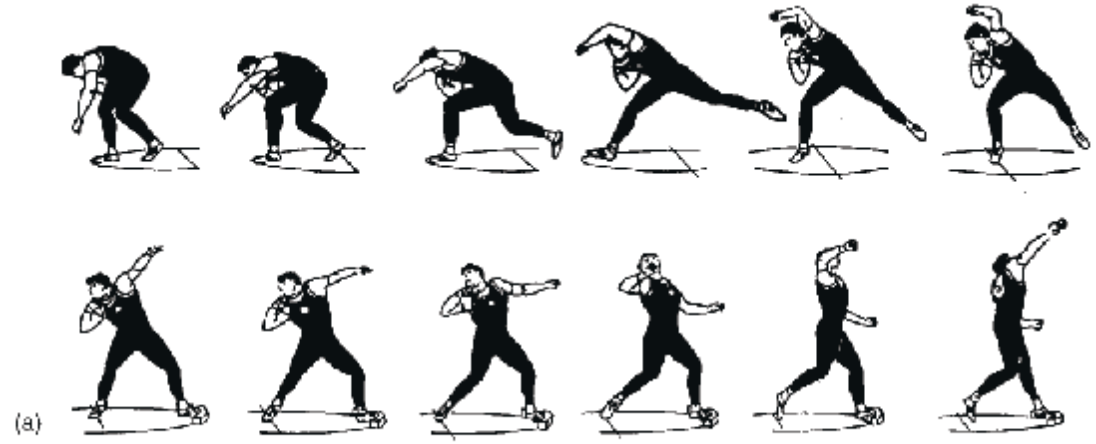
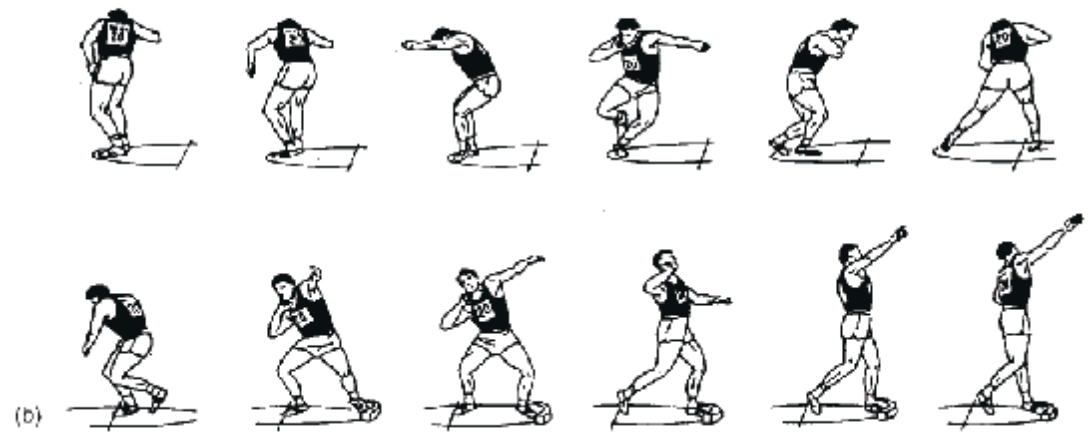


FIGURE 3–21 Multiple-exposure photograph showing positions of two balls at equal time intervals. One ball was dropped from rest at the same time the other was projected horizontally outward. The vertical position of each ball is seen to be the same.

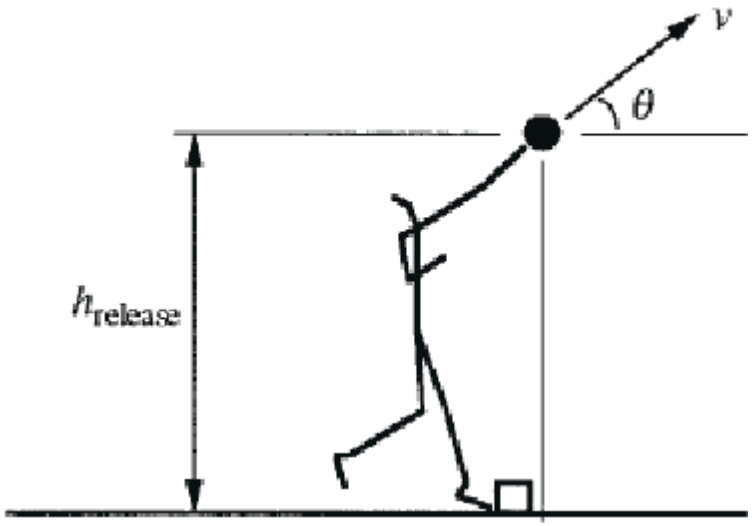




GLIDE TECHNIQUE



ROTATION TECHNIQUE



$$d = \frac{v^2 \sin 2\theta}{2g}\left[1+\sqrt{1+\frac{2gh}{v^2 \sin^2 \theta}}\right]$$

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Optimum release angle in the shot put

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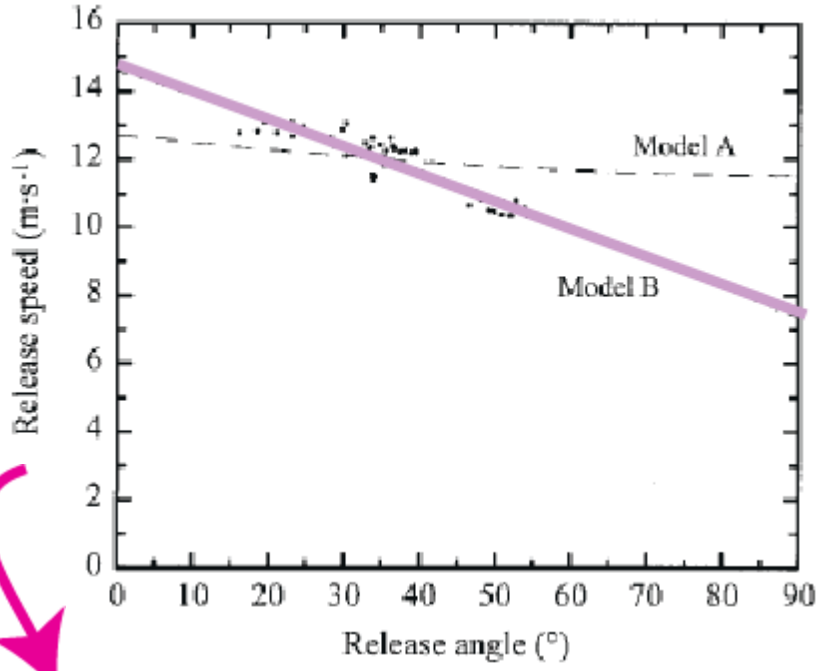

$$d = \frac{v^2 \sin 2\theta}{2g}\left[1+\sqrt{1+\frac{2gh}{v^2 \sin^2\theta}}\right]$$

combine