

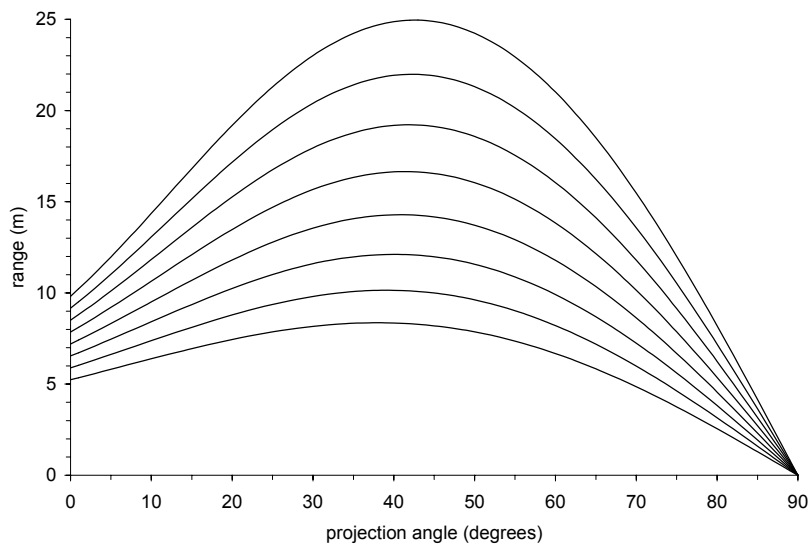
2. Optimum Projection Angle in the Shot Put

Tutor's Notes

Here are the *Excel* graphs that the students should produce.

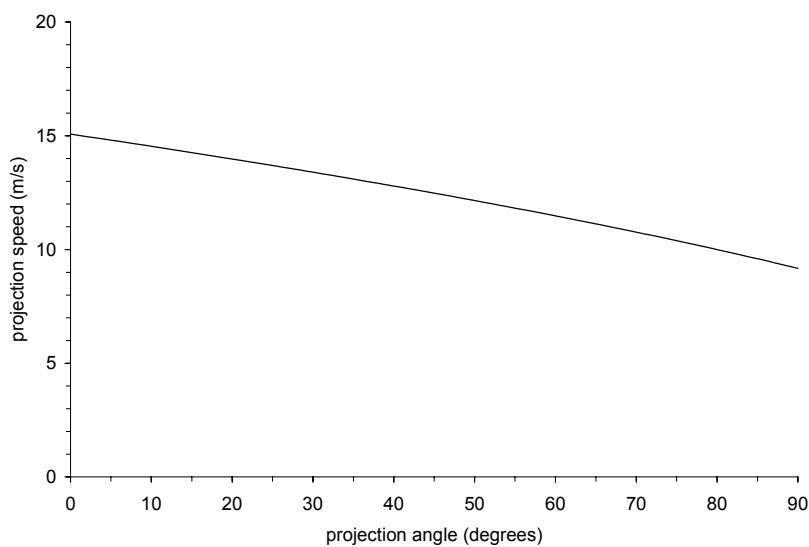
Conventional Calculation

The lower curve is for 8 m/s and the upper curve is for 15 m/s. (Athlete 1)

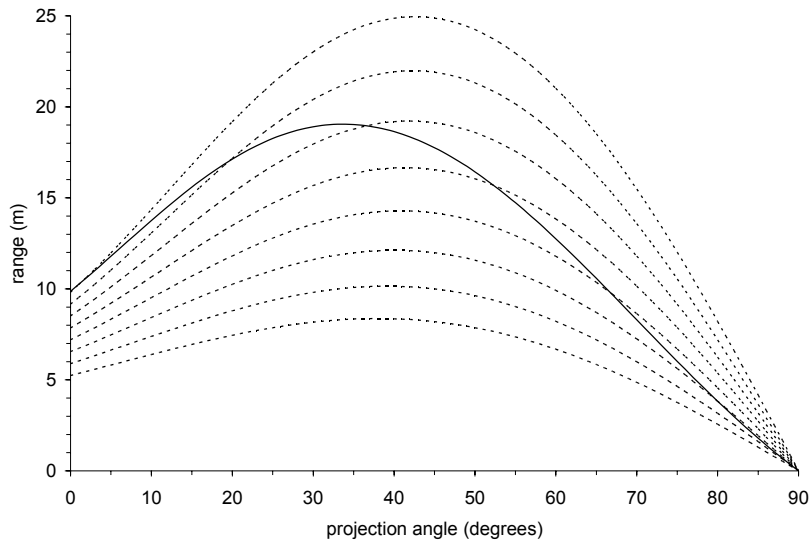


Projection Velocity

This is the velocity-angle curve for Athlete 1.

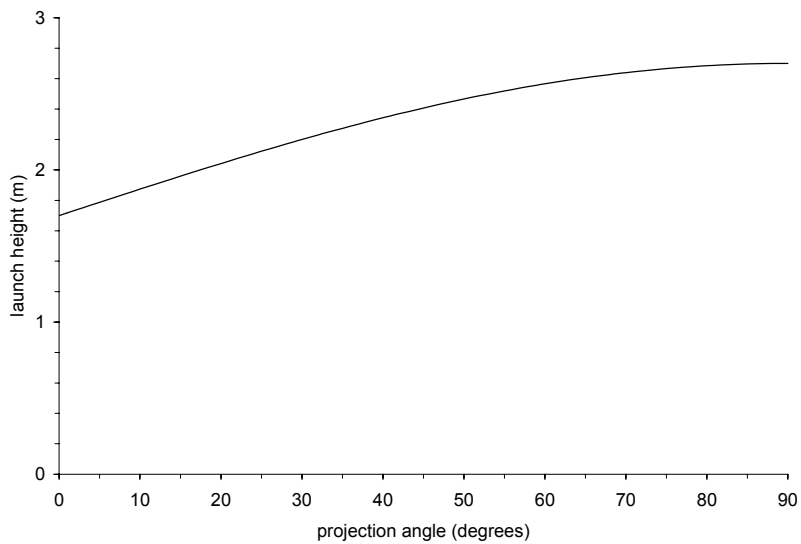


This graph shows that the optimum projection angle for Athlete 1 is about 34°.

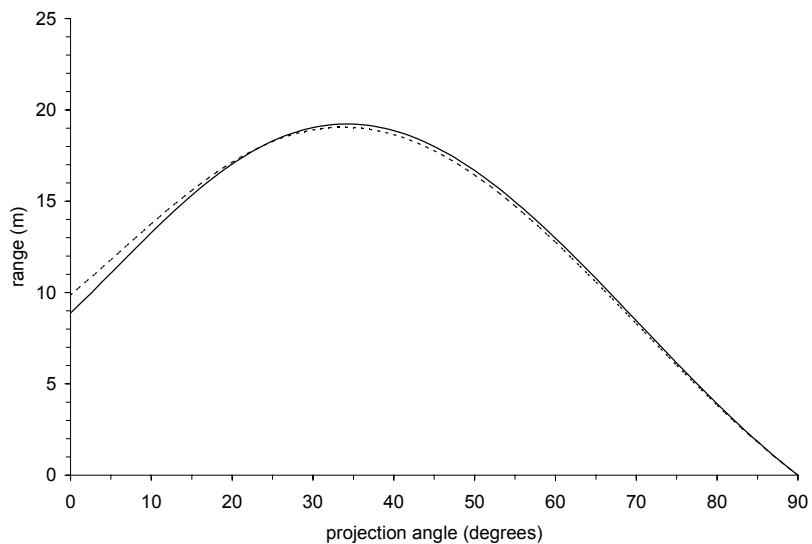


Launch Height

This is the height-angle curve for Athlete 1 (and also for Athletes 2 and 3).

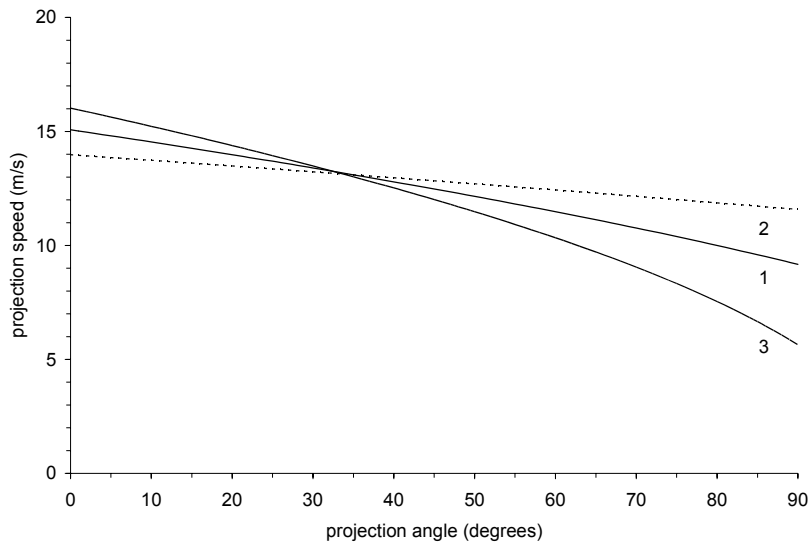


This graph shows the optimum projection angle for Athlete 1 when the height-angle relation is included in equation 1.

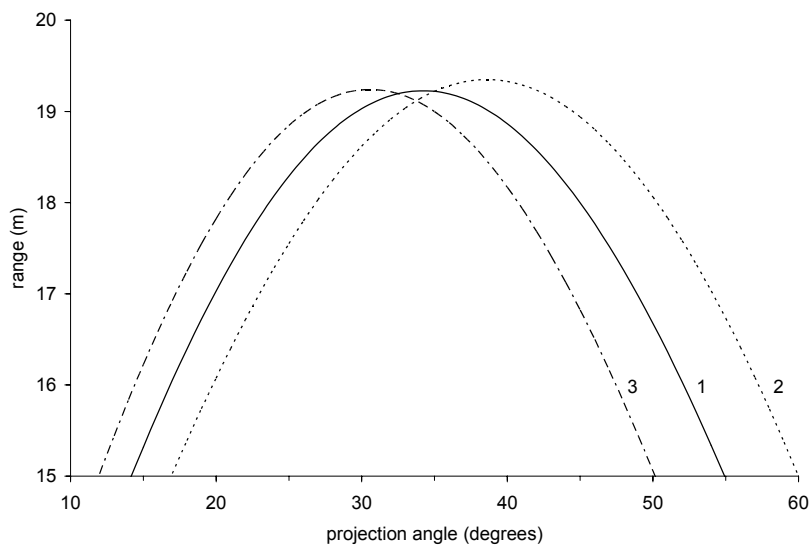


Physical Characteristics of the Athletes

Here are the velocity-angle curves for Athletes 1, 2 and 3.



This shows the optimum projection angles for Athletes 1, 2 and 3.



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