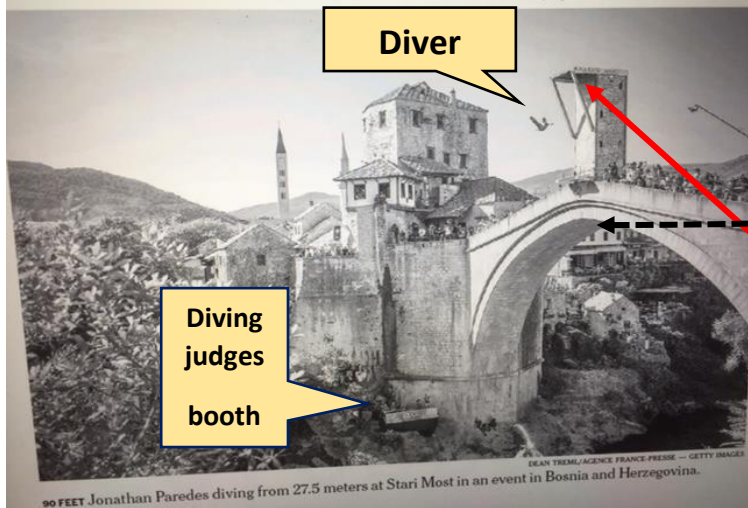


KINEMATICS

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INTRODUCTION: Stari Most is a 16th-century Ottoman bridge in the city of Mostar in Bosnia and Herzegovina that crosses the river Neretva and connects the two parts of the city. [Wikipedia](#)
Height: 79' → **Clearance below: 66'**

The diving contest at left is from **a diving board 90 ft. above river Neretva.**

QUESTIONS: (a) Find speed after diving 90 feet to River surface? , (b) Find time to reach river after 90 ft. fall ? (c) Find speed of diver as he/she passes bottom of bridge 66 feet from river surface?, (d) Find time to reach bottom of bridge after diving from 90 ft. tower? (e) Using a kinematic equation find time to go from bridge bottom to river surface?

HINTS: $x = v_0 t + \frac{1}{2} a t^2$, $v^2 = v_0^2 + 2 a x$, $v = v_0 + a t$
 $g = -32 \text{ ft./s.}^2$, $X_{\text{AVE}} = v_{\text{AVE}} t$

ANSWERS: (a) - 75.89 ft./s., (b) 2.37 s.,
(c) - 39.19 ft./s, (d) 1.22 s., (e) 1.147 s.

