John wants to put his 1800 lb tool shed up on blocks to keep water out of it during heavy rains using a steel lever. He plans to lift up first the right-hand side of the shed, put blocks beneath it, then lift the left-hand side and put blocks beneath it. His fulcrum is 18” high and he weighs 150 lb (his helper to place the blocks weighs only 110 lb). He has the following lever lengths available: 6’, 8’, 10’, 12’, 14’, 16’, 18’ and 20’.

Criteria 1: the lever can be inclined from the horizontal a maximum of 45°.
Criteria 2: the lever must lift the side of the shed at least 18” without the long end of the lever hitting the ground. The ground is level beneath the shed, but beginning at a distance of 6’ from the shed slopes up at a slope of 6 horizontal to 1 vertical.
Criteria 3: the highest John can reach to pull the lever down is 6’. Ignore the slope of the ground when analyzing this criteria.

Determine the lever length(s) that satisfy all criteria.