Friday, January 23

Clicker Questions

Clicker Question 1

Do some work

A pail weighs 10 kg ≈ 22 lb. How much work is required to lift the pail from the ground to an altutide of 18 m ≈ 59 ft? Express the answer in both systems of units.

Here on Earth:

The force of gravity is approximately 9.8 m/s^2 ≈ 32 ft/s^2.

A. $10 \cdot 18$ J $\approx 22 \cdot 59$ ft-lb

B. $10 \cdot 9.8 \cdot 18$ J $\approx 22 \cdot 59$ ft-lb, which is about 1800 J ≈ 1300 ft-lb

C. $10 \cdot 18$ J $\approx 22 \cdot 32 \cdot 59$ ft-lb

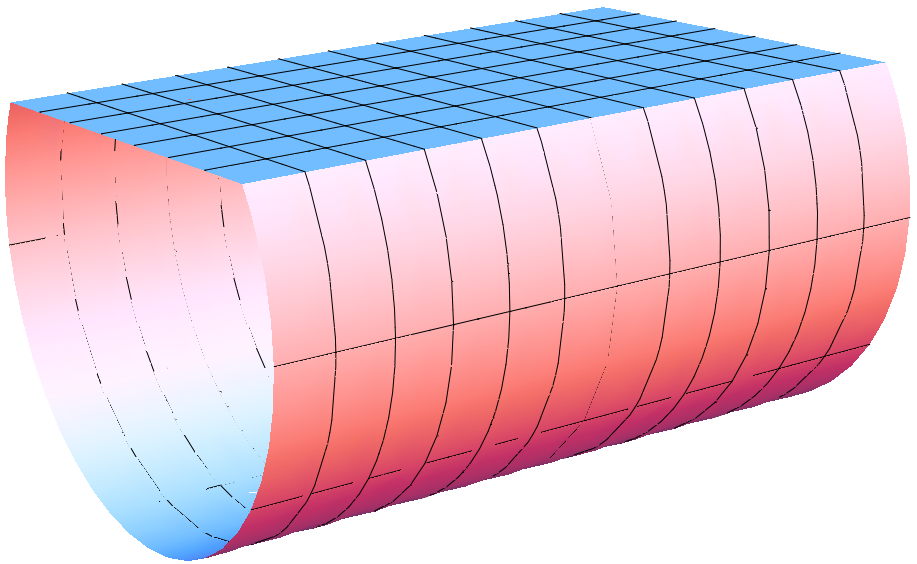
D. $10 \cdot 9.8 \cdot 18$ J $\approx 22 \cdot 32 \cdot 59$ ft-lb

E. none of the above

Clicker Question 2

Cross section of a tank

A water tank is in the shape of a cylinder lying on its side. Its length is 11 m and its radius is 3 m. If the cylinder is cut by a horizontal plane y m above its center and then covered by a flat roof, what is the area of the roof?



A. $22\sqrt{9-y^2}$ m^2

B. $22\cos(y/3)$ m^2

C. $22\sin(y/3)$ m^2

D. $22y$ m^2

E. none of the above