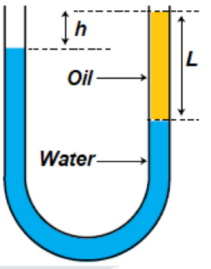
Answer: c. 0.55 m/s

20. **A simple U- tube that is opened at both ends is partially filled with water (ρ_{water}= 1.0 g/ cm³). Oil (ρ_{oil}= 0.82 g/ cm³) is then poured into one arm of the tube, forming a column 10 cm in height as shown in the figure. What is difference h in the heights of the two liquid surfaces?**



a. 0.2 cm
b. 1.8 cm
c. 1.0 cm
d. 1.3 cm

Answer: b. 1.8 cm

P on the left side = P on the right side

$P_{atm} + P_{H_2O} = P_{atm} + P_{oil}$

$\rho g(L-h) = \rho g L$

$(1)(10-h) = (0.82)(10)$

$-h = -1.8$

$h = 1.8$