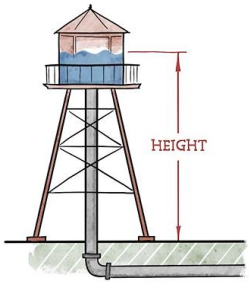
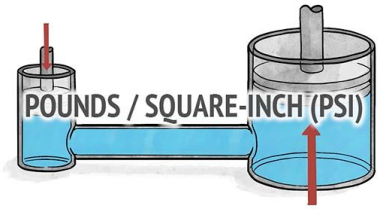
DIFFERENCE BETWEEN PRESSURE AND HEAD?

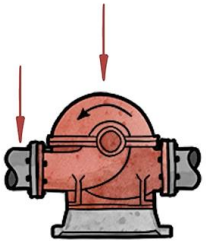




NOTES

WATER SUPPLY: 20 PSI

PUMP: 100-FT HEAD



WATER SUPPLY: 20 PSI (1.4 BAR)

PUMP: 100-FT HEAD (30.5 M)

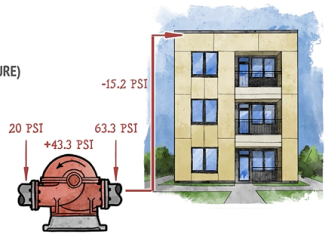
HEIGHT TO 3RD FLOOR: 35-FT (10.7 M)

CONVERT PUMP HEAD TO PRESSURE:
0.433 PSI/FT x 100-FT HEAD = 43.3 PSI (NET PUMP PRESSURE)

PRESSURE AT PUMP DISCHARGE:
20 PSI + 43.3 PSI = 63.3 PSI (AT PUMP DISCHARGE)

CONVERT BUILDING HEIGHT TO PRESSURE LOSS:
0.433 PSI/FT x 35-FT = 15.2 PSI (ELEVATION LOSS)

PRESSURE AT THIRD LEVEL:
63.3 PSI – 15.2 PSI



WATER SUPPLY: 20 PSI (1.4 BAR)

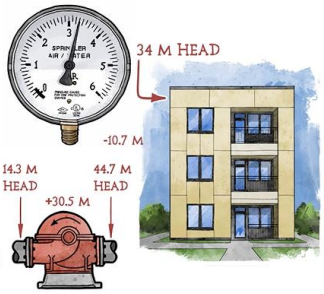
PUMP: 100-FT HEAD (30.5 M)

HEIGHT TO 3RD FLOOR: 35-FT (10.7 M)

CONVERT CITY PRESSURE TO HEAD:
1.4 BAR / 0.098 BAR/M = 14.3 M HEAD (NET PUMP HEAD)

HEAD AT PUMP DISCHARGE:
14.3 M + 30.5 M = 44.7 M HEAD (AT PUMP DISCHARGE)

HEAD AT THIRD LEVEL:
44.7 M HEAD – 10.7 M HEAD = 34 M (HEAD AT THIRD LEVEL)
34 M HEAD = 3.3 BAR



DIFFERENCE BETWEEN PRESSURE AND HEAD:

1. GAUGE PRESSURE IS A SYSTEM PRESSURE WITHOUT CONSIDERATION OF ATMOSPHERIC PRESSURE
2. ABSOLUTE PRESSURE DOES CONSIDER ATMOSPHERIC PRESSURE
3. HEAD PRESSURE IS THE EQUIVALENT HEIGHT OF A COLUMN OF WATER TO CREATE AN EQUIVALENT GAUGE PRESSURE

NOTES