BALABHADRA SKILL DEVELOPMENT ACADEMY
MATHS FORMULA - 14
ARITHMETIC

PIPES AND CISTERNS

Sl	Situation	Formula
1	If a pipe fills a tank in x h and another pipe fills the same tank in y h, then time taken to fill the tank when both pipes are opened together	$\frac{xy}{x+y}h$
2	If a pipe fills a tank in x h, then the part of tank filled in	$1h = \frac{1}{x}$
3	If a pipe fills $\frac{1}{x}$ part of the tank in 1h, then the time taken by pipe to fill the full tank	xh
4	If a pipe can fill a tank in x h and another pipe can empty it y h (h>x). Then, time taken to fill the tank by both pipes working together	$\frac{xy}{y-x}h$
5	If there pipes can fill a tank separately in x, y and z h, then time taken to fill the tank by working together	$\frac{xyz}{xy+yz+zx}h$
6	Two pipes A and B can fill a tank in x and y h, respectively. If both the pipe are opened simultaneously, then the time after which pipe B should be closed, so that the tank is full in t h	$\left[y\left(1-\frac{t}{x}\right)\right]h$
7	Two pipes A and B together fill a tank in time t. If time taken by A alone is more than t by x and time taken by B alone is more than t by Y, then	$t = \sqrt{xy}$