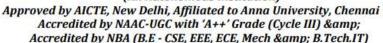




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Puzzle: The Train Trouble

A 150-meter-long train crosses a man standing on a platform in 10 seconds. It takes the same train **18 seconds** to cross a platform.

Question:

What is the length of the platform?

Step 1:

Let the speed of the train be ${\cal S}$ meters/second.

From the first condition:

$$Speed = \frac{Distance}{Time} = \frac{150}{10} = 15 \text{ m/s}$$

Step 2:

Now, let the length of the platform be ${\cal P}$ meters.

The train takes 18 seconds to cross the platform, so:

Total distance covered = Train length + Platform length = 150 + P

$$\mathrm{Speed} = \frac{150 + P}{18}$$

We already found the speed to be 15 m/s. So:

$$15 = \frac{150 + P}{18} \Rightarrow 150 + P = 27$$
 \checkmark $P = 270 - 150 = \boxed{120 \text{ meters}}$





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Puzzle: Boat in the River

A boat takes **8 hours** to travel 48 km **downstream** and back **upstream** to the starting point. If the speed of the river current is 2 km/h, what is the speed of the boat in still water?

