

Jogging

Alyssa and John started jogging at the same time in a 400 m long rounded track.

Alyssa's speed is $\frac{5}{6}$ m/sec (that is, she runs $\frac{5}{6}$ metres in 1 second)

John's speed is $\frac{10}{9}$ m/sec (that is, he runs $\frac{10}{9}$ metres in 1 second)

They decided to stop jogging when they meet again.

1. Who jogs faster, Alyssa or John?
2. Calculate the time Alyssa takes to finish one round. Give your answer in minutes.
3. Calculate the time John takes to finish one round. Give your answer in minutes.
4. Find after how many minutes they will meet.
5. Hence, calculate the distance jogged by each until they stopped.
6. When they stopped, John told Alyssa "I jogged $a\%$ more than you". Find a .

Related criterion

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1. Solve the following operation.

$$\frac{\left(\frac{1}{2} + \frac{1}{3}\right)^2}{\frac{1}{3}} =$$

2. Solve the following operation.

$$2 + \{1 - [3(1 - 4) - 2] - 2\} =$$

3. A man paid 50 soles for gasoline including the tax. If the tax rate is 12%, how much did he pay for gasoline and how much for tax?

4. Camila wants to buy a TV. She found a nice Plasma TV for 1,150 soles with a 15% discount. How much money would she pay?

5. A boy is building a tower with small plastic blocks of four different colours. The first section is red and 20 cm high. The next section's height is 40% of the previous section and the pattern will be the same for the other three sections. How tall will the tower be?

Round your answer to one decimal place.

6. Solve the following operation.

$$\frac{\left\{ \frac{1}{2} - \left(\frac{1}{2} - 2 \right)^2 \right\}^2}{1 + \frac{1}{2}} =$$

7. Solve the following operation.

$$\left\{ \frac{1}{2} - \left(1 - \frac{1}{3} \right)^2 + \left(\frac{1}{3} - 1 \right)^3 \right\} + 1 =$$

8. A toy car can cover 1.6 km in 45 minutes. How long would it take to cover 30 km? Assume that the speed is constant and give the answer in hours.

9. The flag below has three horizontal bands. Each band represents 33.3% of the total area of the flag. If the length of a special flag in this country is 19.2 m, draw a detailed diagram of this flag.

