1) A racing pigeon that was released at 12:00 noon reached its home loft at 2:30pm the same day having flown a distance of 200km. What was the pigeon's average speed in kilometers per hour?

A) 40   B) 50   C) 80   D) 100   E) 160

1) $t = 2.5\,hrs$

$d = 200\,km$

$d = r \cdot t$

$r = \dfrac{d}{t} = \dfrac{200}{2.5} = 80\ \dfrac{km}{hr}$ Ⓒ

1) A racing pigeon that was released at 12:00 noon reached its home loft at 2:30pm the same day having flown a distance of 200km. What was the pigeon's average speed in kilometers per hour?

A) 40   B) 50   C) 80   D) 100   E) 160

Jul 11-11:36 AM

2) A car travels 180km from A to B at 60km/hr and returns from B to A along the same route at 90km/hr. The average speed in km/hr for the round trip is

2) $d_{AB} = 180 \text{ km}$

$r_1 = 60 \frac{km}{hr}$

$r_2 = 90 \frac{km}{hr}$

$t = \frac{d}{r} = \frac{180}{60} = 3$

$t = \frac{d}{r} = \frac{180}{90} = 2$

total time = 5 hrs

$d = r \cdot t$

$= 60 \cdot t_1 = 90 \cdot t_2$

$r_{avg} = \frac{d}{t} = \frac{360}{5}$

$r_{avg} = 72 \frac{km}{hr}$

2) A car travels 180km from A to B at 60km/hr and returns from B to A along the same route at 90km/hr. The average speed in km/hr for the round trip is

Jul 11-11:27 AM

4

B-alt) $r_1 = 60 \, km/hr$

$r_2 = 90 \, km/hr$

$r = \dfrac{d}{t}$

$r_{avg} = \dfrac{2d}{t_1 + t_2}$

$t_1 = \dfrac{d}{60} \quad t_2 = \dfrac{d}{90}$

$r_{avg} = \dfrac{2d}{\dfrac{d}{60} + \dfrac{d}{90}}$

$r = \dfrac{2d}{\dfrac{3d}{180} + \dfrac{2d}{180}} = \dfrac{2d}{\dfrac{5d}{180}}$

$= \dfrac{2d \cdot 180}{5d} = \dfrac{360}{5} = \boxed{72}$

3) Jordan walked up a mountain at the rate of 2 miles/hr and jogged down the same route at 6 miles/hr. If she traveled a total of 24 miles, how many hours did it take her to complete the entire trip?

(A) 24   (B) 18   (C) 16   (D) 8   (E) 6

3) Jordan walked up a mountain at the rate of 2 miles/hr and jogged down the same route at 6 miles/hr. If she traveled a total of 24 miles, how many hours did it take her to complete the entire trip?

12 miles each way

$$d = r \, t$$

up: $t = \dfrac{12}{2} = 6 \text{ hours}$ down: $t = \dfrac{12}{6} = 2 \text{ hours}$

8 hours

4) A car travelling at an average rate of 55 km/hr made a trip in 6 hours. If it had traveled at an average rate of 50 km/hr, the trip would have taken how many minutes longer?

(A) 16   (B) 25   (C) 30   (D) 35   (E) 36

Jul 17-11:10 AM

4) A car travelling at an average rate of 55 km/hr made a trip in 6 hours. If it had traveled at an average rate of 50 km/hr, the trip would have taken how many minutes longer?

$$d = r \cdot t$$
$$d = 55 \cdot 6 = 330 \, km$$

$$d = r \cdot t$$
$$330 = 50 \cdot t$$
$$6.6 = t$$

$$.6 \, hrs \left(\frac{60 \, min}{1 \, hr} \right)$$
$$= 36 \, min$$

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