Number of heartbeats in a lifetime   (using 'more exact numbers)

(77 years) x (3.15 x 10^7 s/year) x (1 beat/s) = 2.43 x 10^9 ≈ **10^9 heartbeats!**

How many revolutions will a 14-inch radius tire have to make during a crossing of the Continental US?

C=2πr   Continental US ~= 3000 miles   1 mile = 5280 ft   14 inches ≈ 1 ft

Estimate:

C = 2πr   = 2 (3) (1) **= 6 ft**

Distance: 3000 miles = ____ ft   3000 mi x (5000 ft/mi) = (3 x 10^3) x (5 x 10^3) =
                        ≈ 15 x 10^6 ft   = total distance

rev = 15 x 10^6 ft x (1 rev/6 ft) = 2 x 10^6 revolutions.   Answer ≈ ==10^6== revolutions

Use more exact numbers:

C=2πr   Continental US ~= 3000 miles   1 mile = 5280 ft   14 inches = 1.16 ft

C = 2πr   = 2 (3.14) (1.16) **= 7.28 ft**

Distance: 3000 miles = ____ ft   3000 mi x (5280ft/mi) = **1.58 x 10^7 ft**   = total distance

rev = 1.58 x 10^7 ft x (1 rev/7.28 ft) = 2.17 x 10^6 revolutions.   Answer = ==10^6== revolutions