

## The JETS Challenge

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### Challenge 17 – The Jelly Bean Challenge

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**Problem:**

The Just Born Candy Company in Bethlehem, PA, makes 20 billion jelly beans each year, and runs 16 hrs per day, 5 days per week year round. The typical jelly bean is an ellipsoid that measures 15mm by 9 mm by 9 mm. Starting on Friday, January 2, 2004, and taking no holidays until March 12, 2005.

If the jelly bean production was laid end to end, how many complete circles of the earth (which is 12,756 km in diameter) could be completed by today?

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**Solution:**

20,000,000,000 jelly beans made in 1 year

$5 \times 52 = 260$  production days in 2004

76,923,076 beans/day

Jan    Feb    Mar of 2005  
21    20    10    = 51 days

$260 + 51 = 311$

23,923,076,876 beans made

× 15 mm (length of each jelly bean)

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358,846,149,540 mm

circumference of earth =  $2\pi(12,756\text{km}) \approx 40,074.2\text{km}$

$$\text{xmm} = 40,074.2 \text{ km} * \frac{1,000\text{mm}}{1\text{m}} * \frac{1,000\text{m}}{1\text{km}} = 40,074,155,889.2\text{mm}$$

$$\frac{\text{total length of beans}}{\text{circum. of earth}} * \frac{358,846,149,540 \text{ mm}}{40,074,155,889.2 \text{ mm}} \cong 8.955 \text{ times}$$

The answer is 8 complete circles of the earth (no rounding allowed)