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A Word about Wood

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a) in going from the equator to the pole for a 160-lb man? 120 lb woman? 30-ton brontosaurus dinosaur?

b) in going from Keokuk Iowa (latitude 40.4°) north to Decorah (latitude 43.3°) for a 140-lb person?

2. What would be the difference in performance, due to the variation in gravity, between Helsinki and the equator, for a world-class high jump of 7'6'' at Helsinki? Pole vault of 18 ft? Baseball hit of 450 ft?

3. A 145-lb wrestler drives from Blairsburg to Wellsburg. The difference in gravity anomaly is 170 milligals. How much weight does he "lose"?

Answers

1. (a) weight gain is 385 gm or 13.6 ounces

$$160 \text{ lbs} \times \frac{983.223 - 978.032}{978.032} \text{ mgals}$$

10.2 ounces; 318 lbs for the dinosaur
(b) (see 1967 Gravity formula);

$g_{Keokuk} = 980.2044$ mgals, $g_{Decorah} =$

980.4651; weight gain is 0.6 ounces

$$(140 \text{ lbs} \times \frac{980.4651 - 980.2044}{980.2044})$$

2. (see Table 1 for ratio of g, i.e. 981.917/978.032); increase at the equator of 0.9 cm (about ⅜'') for high jump; 2.2 cm (about ⅞'') for pole vault; 54 cm (about 21'') for baseball hit

3. 0.4 ounces ($\frac{170}{\text{about } 980,000} \times 145$ lbs)

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The annual per capita consumption of wood in the United States is 65 cubic feet. This is equivalent to seven trees, ten inches in diameter and fifty feet tall for every American. The tonnage of wood consumed exceeds the total tonnage of steel, plastics, non-ferrous metals and Portland cement combined. It has been predicted that 95% of our petrochemical feedstocks could be derived from wood instead of petroleum.

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