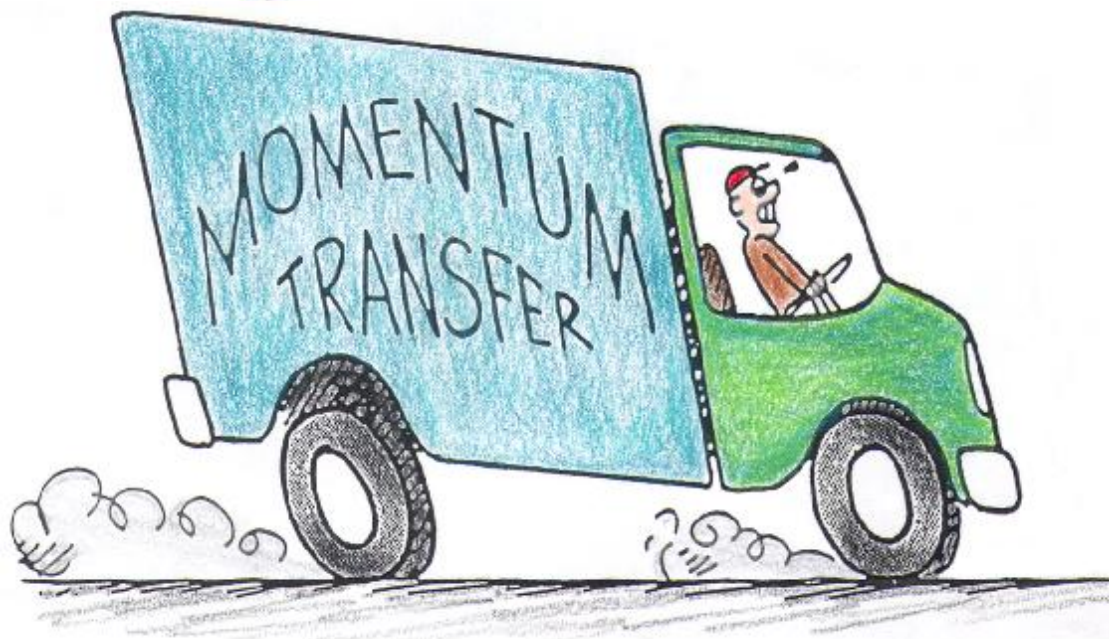


NEXT-TIME QUESTION

CONCEPTUAL Physics



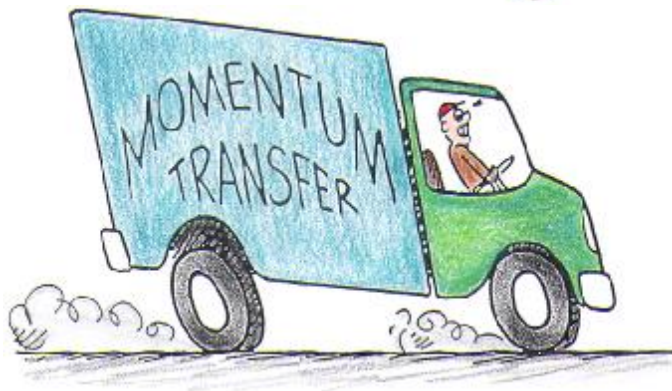
The brakes are slammed on a speeding truck and it skids to a stop. If the truck were heavily loaded so it had twice the total mass, the skidding distance would be

- a) the same.
- b) $1\frac{1}{2}$ times as far.
- c) four times as far.



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Answer: a

Twice the mass means the skidding tires will bear against the road with twice the force, which results in twice the friction. Twice as much friction acting on twice as much mass produces the same deceleration and hence the same stopping distance.

Twice the *speed* would produce four times the stopping distance.



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