

ch.5 / Conceptual Questions

- ① The driver can apply the brakes. The driver can also change the direction of motion of the car to produce acceleration.
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- ⑤ The problem is that the net force (i.e. the force of gravity) remains in the same vertical direction, while the velocity is changing its direction. Thus the force is not perpendicular to the direction of velocity after the projectile is launched.
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- ⑧ The moon's orbital speed keeps it on its path. If the moon was moving slower than what it is, the force of gravity of the earth would pull the moon on an inward spiral.
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(10) The only two places where a scale reads your true weight is at the poles. In these cases, the rotational speeds are zero (because at the poles, the radius of rotation is zero).

Using the same idea, the measured weight deviates by a maximum amount from the true weight at the equator, where the rotational radius is maximum.
