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**Ch 7.1 Circular Motion** Page 236 - Practice Problems A– Centripetal Acceleration

1. A rope attaches a tire to an overhanging tree limb. A girl swinging on the tire has a centripetal acceleration of 3.0. m/s2. If the length of the rope is 2.1 m, what is the girl’s tangential speed?
2. As a young boy swings a yo-yo parallel to the ground and above his head, the yo-yo has centripetal acceleration of 250 m/s2. If the yo-yo’s string is 0.50 m long, what is the yo-yo tangential speed?
3. A dog sits 1.5 m from the center of a merry-go-round. The merry-go-round is set in motion, and the dog’s tangential speed is 1.5 m/s . What is the dog’s centripetal acceleration?
4. A race car moving along a circular track has a centripetal acceleration of 15.4 m/s2. If the car has a tangential speed of 30.0 m/s, what is the distance between the car and the center of the track?