Select the correct answer from the drop-down menu.

A boy holds his dart gun 40 cm above the ground. As he fires a dart at 6.9 m/s, 38° to the horizontal, the maximum height reached by the dart, measured from the ground, is

1. 1.32 ✓ m.

1. 1.32 ✓

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Select the correct answer.

While John is walking along the beach, exactly parallel to it, heading from west to east at a velocity of 1.2 m/s and flying his kite, there is a gentle breeze blowing across the beach coming perpendicularly from the sea at a velocity of 16 km/h. What is the kite's velocity relative to a lifeguard sitting in a nearby tower?



- ○ 6.1 m/s
- ○ 3.2 m/s

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- ○ 4.4 m/s
- ◉ 4.6 m/s ✓

Fill in the blank with the correct number.



A kangaroo clears a fence by jumping just above it at a velocity of 7.9 m/s, 54^{o} with the ground. If the jump lasts 1.1 s, then the fence is

1. 2.0 ✓ m high.

(Give your answer to 2 significant figures.)

1. 2.0

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✓

Fill in the blank with the correct number.



A small ball attached to a 110 cm string swings in horizontal circles at a velocity of 5.3 m/s. The period of revolution of this ball is 1. 1.3 ✓ s.

(Give your answer to two significant figures).

1. 1.3 ✓

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Select the correct answer from the drop-down menu.

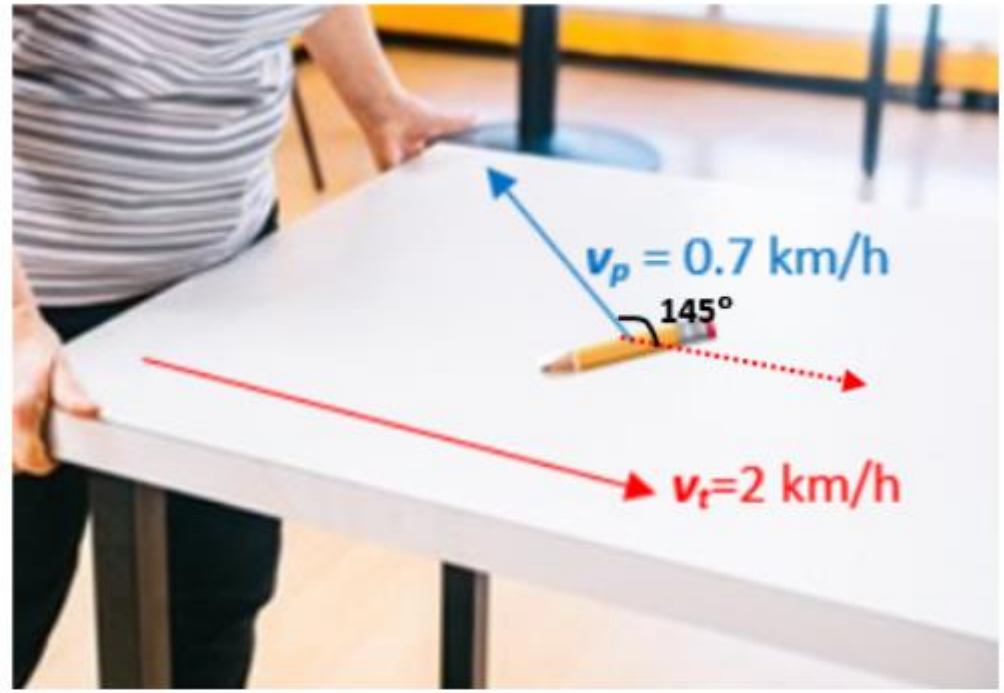
The centripetal force acting on a 790 kg racing car that is moving at a speed of 306 km/h as it rounds a 150 m radius bend is 1. 38 ✓ kN.

1. 38 https://t.me/Grade10GenAdv ✓



Select the correct answer.

A worker is moving a desk by pushing it slowly forward at 2 km/h. Meanwhile, a pencil rolls diagonally backwards at a velocity of 0.7 km/h, at an angle of 145° with the direction of the table's motion. What is the velocity of the pencil relative to the ground?



- (●) 1.5 km/h ✓
- ( ) 2.7 km/h
- ( ) 1.3 km/h
- ( ) 1.1 km/h

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Select the correct answer.

Two cars, Car 1 and Car 2, are moving on the same road heading to the same direction and at the same velocity of 80 km/h. Which statement is true?



- ○ Relative to a nearby tree, both cars are moving at 40 km/h.
- ◉ Relative to Car 1, Car 2 is at rest. ✓
- ○ Relative to the road, Car 2 is at rest.
- ○ Relative to Car 1, Car 2 is moving at 80 km/h.

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Select the correct answer.

A runner moving at a speed of 7.8 m/s experiences a centripetal force of 285 N, as he is going around a curve with a radius of 16 m. What is the runner's mass?

- 82 kg
- 85 kg
- 75 kg ✓
- 78 kg

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Select the correct answer.

In a shopping mall, Imad takes the escalator to go to a higher floor. Instead of standing still on the escalator, Imad starts walking up at a velocity of 1.2 m/s. If the escalator's velocity is 0.5 m/s, what is Imad's velocity relative to the ground?

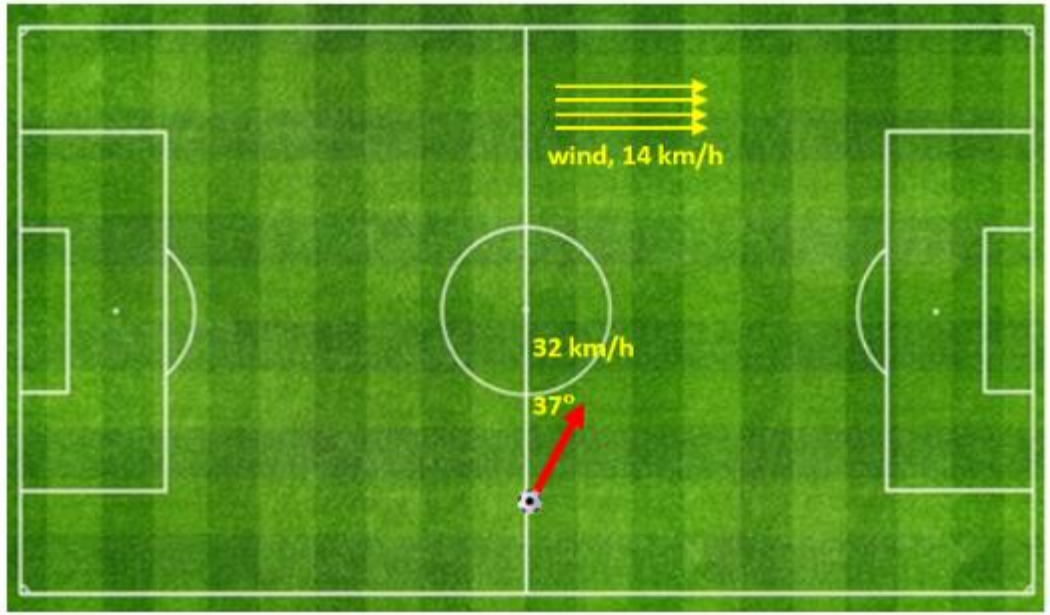


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- (●) 1.7 m/s ✓
- ( ) 1.1 m/s
- ( ) 0.7 m/s
- ( ) 1.3 m/s

Select all correct answers.

In a football game, a player kicks the ball at 32 km/h, 37° with the field's halfway line. There is a moderate breeze blowing to the right at a velocity of 14 km/h. What is the ball's velocity relative to a player standing at the halfway line? and what is its direction with respect to the horizontal one?



- [ ] 38 km/h
- [ ] 28°

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- [ ] 44 km/h
- [x] 42 km/h ✓
- [ ] 43°
- [x] 38° ✓