KINEMATICS AND DYNAMICS - PRACTICE TEST | NORTH CAROLINA PHYSICS · UNIT 1 · 10 QUESTIONS

Kinematics and Dynamics, 10-question test — Practice Test

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1

The coefficient of static friction is 0.5 and the normal force is 60 N. The maximum static friction force is

Question 1

The coefficient of static friction is 0.5 and the normal force is 60 N. The maximum static friction force is

A) 30 N

B) 110 N

C) 120 N

D) 0.0083 N

A 30 N

B 110 N

C 120 N

D 0.0083 N

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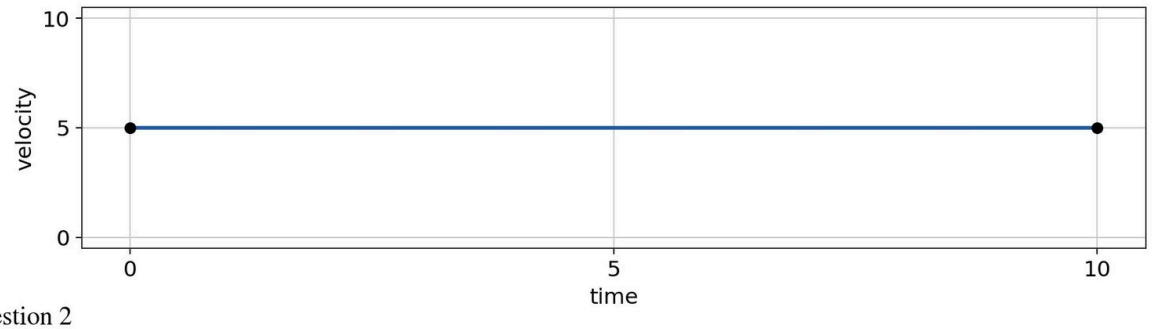
2 A velocity time graph shows a horizontal line above zero. The motion is



Question 2

A velocity time graph shows a horizontal line above zero. The motion is

A) at rest

B) constant velocity

C) constant acceleration

D) decreasing velocity

- **A** at rest
- **B** constant velocity
- **C** constant acceleration
- **D** decreasing velocity

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3 An object in uniform circular motion has a centripetal acceleration directed

Question 3

An object in uniform circular motion has a centripetal acceleration directed

A) along its velocity

B) opposite its velocity

C) toward the center of the circle

D) away from the center

A along its velocity

B opposite its velocity

C toward the center of the circle

D away from the center

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4

An object moves in a circle at speed 8 m/s with radius 16 m. Its centripetal acceleration is

Question 4

An object moves in a circle at speed 8 m/s with radius 16 m. Its centripetal acceleration is

A) 2 m/s^2

B) 128 m/s^2

C) 0.5 m/s^2

D) 4 m/s^2

A 2 m/s²

B 128 m/s²

C 0.5 m/s²

D 4 m/s²

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5 A projectile is launched horizontally. Its horizontal acceleration, ignoring air resistance, is

Question 5

A projectile is launched horizontally. Its horizontal acceleration, ignoring air resistance, is

A) 10 m/s^2

B) 0 m/s^2

C) 9.8 m/s^2 downward

D) equal to its launch speed

- **A** 10 m/s²
- **B** 0 m/s²
- **C** 9.8 m/s² downward
- **D** equal to its launch speed

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6 A 3 kg object is pulled with a net force of 18 N. Its acceleration, in meters per second squared, is _____

Question 6

A 3 kg object is pulled with a net force of 18 N. Its acceleration, in meters per second squared, is ____

ANSWER _____

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7 An object travels 90 m in 15 s. Its average speed, in meters per second, is _____

Question 7

An object travels 90 m in 15 s. Its average speed, in meters per second, is ____

ANSWER _____

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8 If the net force on an object doubles while its mass stays the same, its acceleration

Question 8

If the net force on an object doubles while its mass stays the same, its acceleration

A) halves

B) stays the same

C) doubles

D) becomes zero

A halves

B stays the same

C doubles

D becomes zero

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9

Two forces of 25 N and 15 N act in opposite directions. The size of the net force, in newtons, is _____

Question 9

Two forces of 25 N and 15 N act in opposite directions. The size of the net force, in newtons, is ____

ANSWER _____

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10

An astronaut has mass 70 kg on Earth. In deep space, far from gravity, her mass is

Question 10

An astronaut weighs 686 N on Earth. In deep space, far from gravity, her weight is about

A) 686 N

B) 70 N

C) 0 N

D) 7 N

A 0 kg

B 70 kg

C 700 kg

D 7 kg

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ANSWER KEY

1. A
2. B
3. C
4. D
5. B
6. 6
7. 6
8. C
9. 10
10. B

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