QUIZ Form A

d = ½ gt2 v = d/t a = (vf – vi)/t

**Part 1** Choose the letter of the answer that **best** completes each statement.

1. Which value most closely represents the acceleration of free fall? a) 1 m/s/s b) 10 m/s/s c) 1 km/s/s d) 10 kg

2. Velocity is equal to speed plus:

 a) units b) friction c) unbalanced force d) direction

3. What is the standard unit of force in the metric system?

 a) mass b) meters c) Newtons d) grams

4. Which is not true about the velocity and acceleration of the same moving vehicle:

 a) have different units c) can never be in different directions

 b) acceleration depends on velocity d) they may be equal

5. Which equation does not apply to freely falling objects:

 a) d = ½ gt2 b) d = ½ a t2 c) a = 2d/ t2 d) t = 2d/g

**Part 2** Look at each question and determine if the underlined word or phrase makes that statement true or false. If the statement is true, write “true.” If it is false, change the underlined word or words to make the statement true.

6. The greater the surface area, the less the friction applied to an object.

7. Acceleration is the change in speed over time.

8. An object is thrown in the air and lands back on the ground. The velocity at the point at which it hits the ground is called the average velocity.

9. Relative motion describes motion based on where an object is moving. In other words, motion can seemingly change depending on what your frame of reference is when observing.

10. A crumpled paper and a flat sheet of paper are dropped simultaneously to the ground. The crumpled paper hits first because of gravity acting on the flat sheet of paper.

**Part 3** Show all work for the problems below.

1. A stone is dropped off a bridge. After 3 seconds, how far would the stone have fallen?
2. A roller coaster’s velocity at the top of a hill is 10 meters per second. Four (4) seconds later it reaches the bottom of the hill with a velocity of 26 m/s. What is its acceleration?
3. How far does a ball travel that is thrown 30 m/s for 3 seconds?

**Part 4** Copy the graph below and label “constant velocity” and “constant acceleration” on the appropriate lines.

Speed (m/s)

Time (s)

QUIZ Form B

d = ½ gt2 v = d/t a = (vf – vi)/t

**Part 1** Choose the letter of the answer that **best** completes each statement.

1. Which equation does not apply to freely falling objects:

 a) d = ½ gt2 b) d = ½ a t2 c) a = 2d/ t2 d) t = 2d/g

2. Which value most closely represents the acceleration of free fall? a) 1 m/s/s b) 10 m/s/s c) 1 km/s/s d) 10 kg

3. What is the standard unit of force in the metric system?

 a) mass b) meters c) Newtons d) grams

4. Which is not true about the velocity and acceleration of the same moving vehicle:

 a) have different units c) can never be in different directions

 b) acceleration depends on velocity d) they may be equal

5. Velocity is equal to speed plus:

 a) units b) friction c) unbalanced force d) direction

**Part 2** Look at each question and determine if the underlined word or phrase makes that statement true or false. If the statement is true, write “true.” If it is false, change the underlined word or words to make the statement true.

6. A crumpled paper and a flat sheet of paper are dropped simultaneously to the ground. The crumpled paper hits first because of gravity acting on the flat sheet of paper.

7. The greater the surface area, the less the friction applied to an object.

8. Acceleration is the change in speed over time.

9. Relative motion describes motion based on where an object is moving. In other words, motion can seemingly change depending on what your frame of reference is when observing.

10. An object is thrown in the air and lands back on the ground. The velocity at the point at which it hits the ground is called the average velocity.

**Part 3** Show all work for the problems below.

11. A roller coaster’s velocity at the top of a hill is 10 meters per second. Two (2) seconds later it reaches the bottom of the hill with a velocity of 20 m/s. What is its acceleration?

1. A stone is dropped off a bridge. After 4 seconds, how far would the stone have fallen?
2. How far does a ball travel that is thrown 20 m/s for 3 seconds?

**Part 4** Copy the graph below and label “constant velocity” and “constant acceleration” on the appropriate lines.

Speed (m/s)

Time (s)

Answers

Form A

1. b 10 m/s/s

Speed (m/s)

Time (s)

2. d direction

constant acceleration

3. c Newtons

4. c different directions

constant speed

5. d t = 2d/g

6. false greater 14.

7. true

8. false instantaneous

9. true

10. false air resistance/drag

11. d = ½ gt2 = ½ (10 m/s/s)(3 s)2 = 45 m

12. a = (vf – vi)/t = (26 m/s – 10 m/s)/(4 s) = 4 m/s2

13. v = d/t → d = vt = (30 m/s)(3 s) = 90 m

Form B

1. d t = 2d/g

Speed (m/s)

Time (s)

constant speed

2. b 10 m/s/s

3. c Newtons

constant acceleration

4. c different directions

5. d direction

6. alse air resistance/drag 14.

7. false greater

8. true

9. true

10. false instantaneous

11. a = (vf – vi)/t = (20 m/s – 10 m/s)/(2 s) = 5 m/s2

12. d = ½ gt2 = ½ (10 m/s/s)(4 s)2 = 80 m

13. v = d/t → d = vt = (20 m/s)(3 s) = 60 m