Part 3 Forces in Motion

Name:
Due:

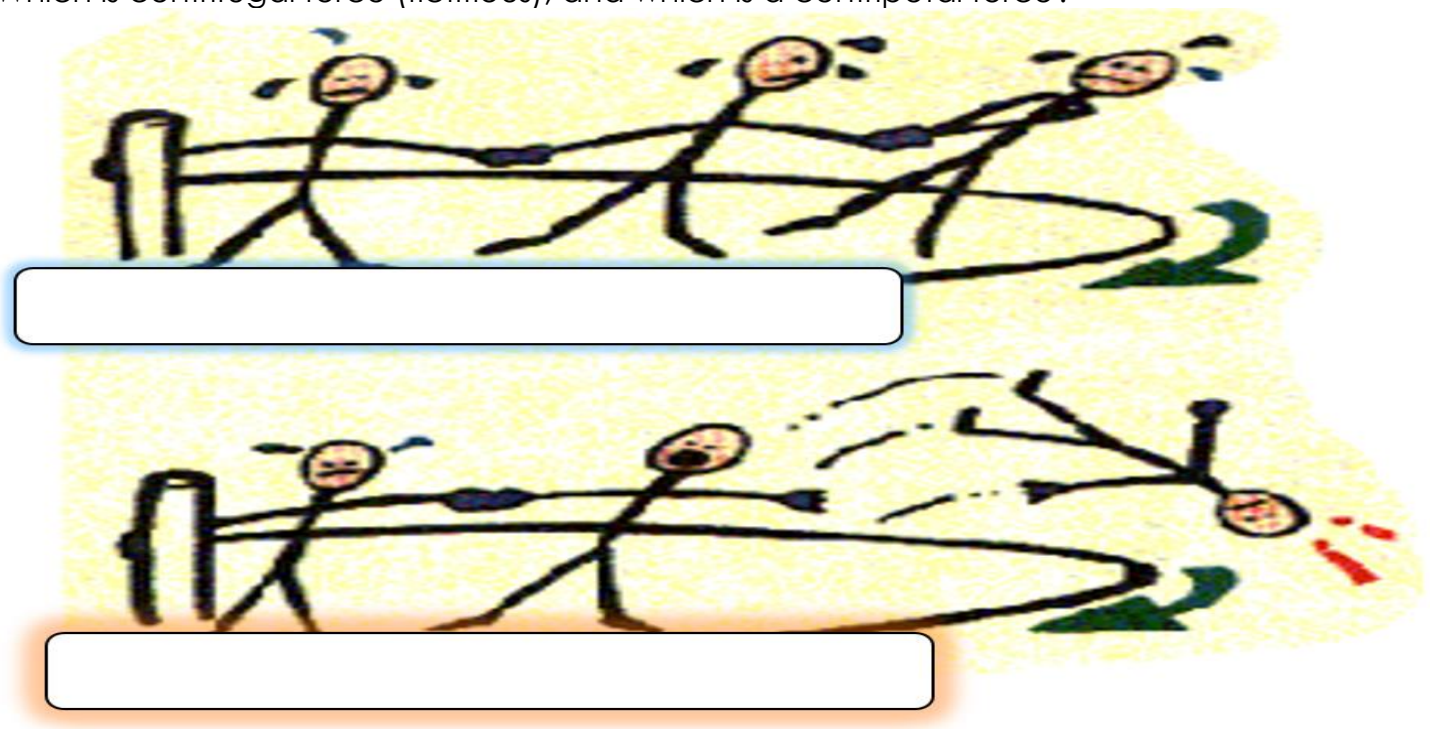
Part 3 Lesson 1 Centripetal Force

I am aware that I need to show all mathematical work in an organized manner to receive any credit for a question that involves calculations of any kind. Omitting / leaving out the units in the problem or at the end will also result in zero credit ◊ _____

Centripetal Force: Force that acts on a body moving in a circular path and is directed _____ around which the body is moving.

Centrifugal Force: (Does not exist) The Force that makes you _____ that a force is acting outward on a body moving around a center, arising from the body's inertia.

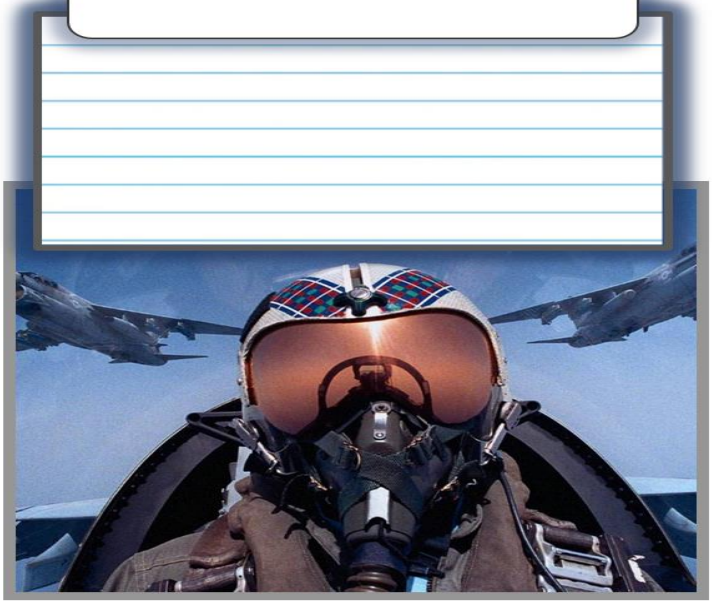
Which is centrifugal force (fictitious), and which is a centripetal force?



Response=

A scalar quantity has only _____. While a vector quantity has _____ and _____.

Which is a Scalar, and which is a vector as described in the slideshow. What are differences between the two and name some scalar and vector quantities.



Speed: A measure of motion, = distance d_____ by time. D/T

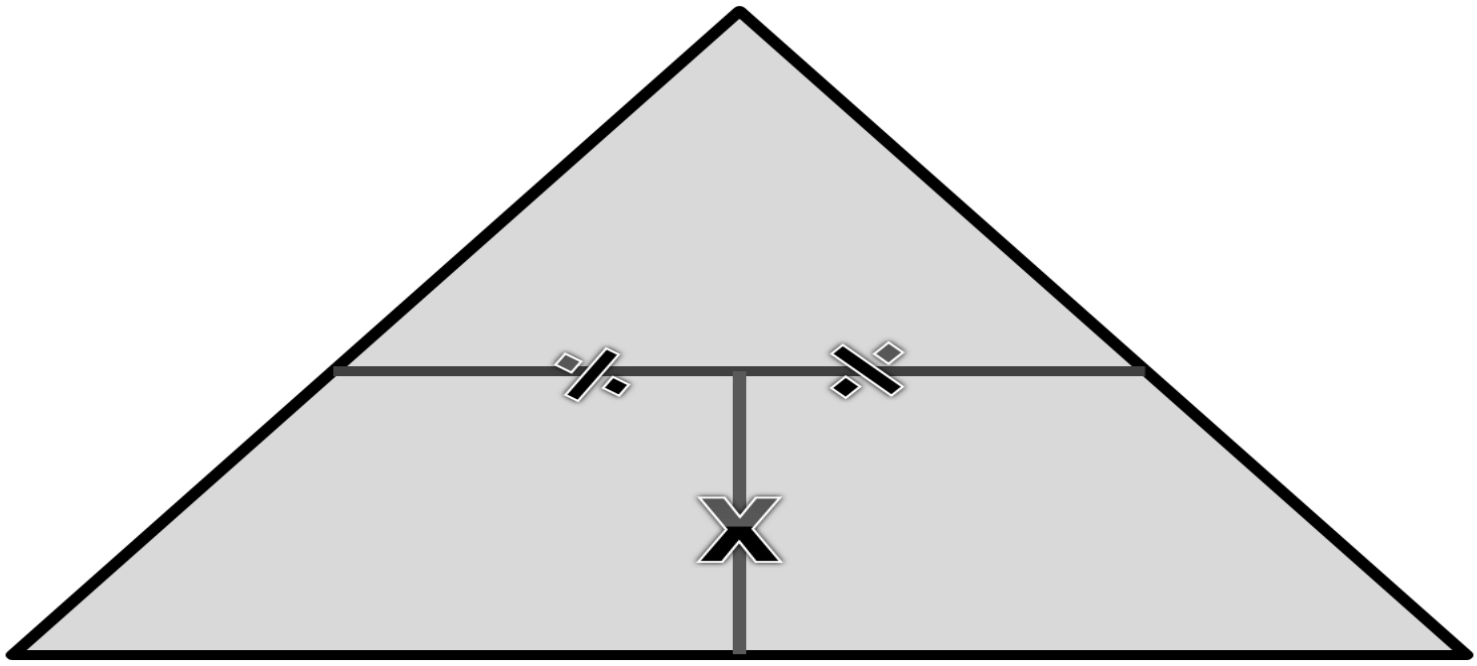
-Speed is the rate of motion, or the rate of change of position.

-Can only be zero or positive.

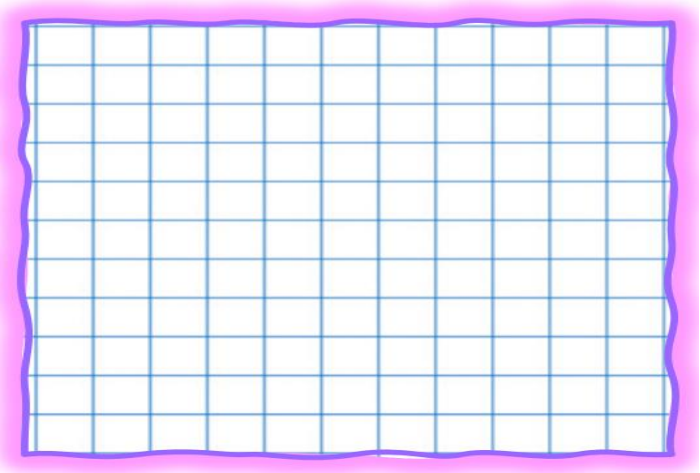
Distance = Speed * time (_____)

Speed = Distance _____ by time

Time = Distance _____by Speed

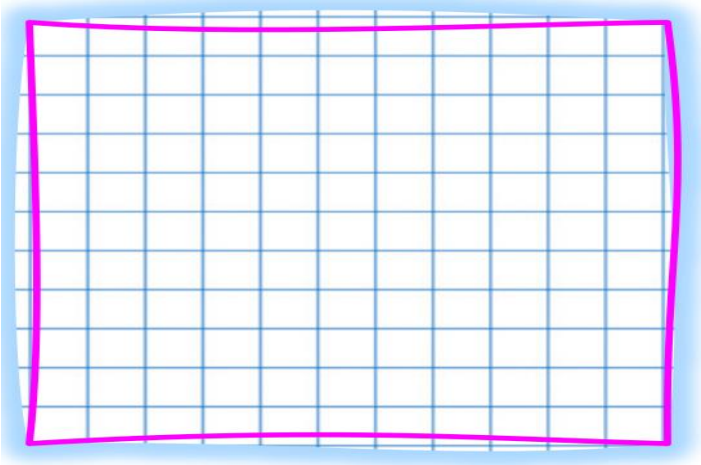


How far did Joe walk if he walked a steady 4 km/h for three straight hours?



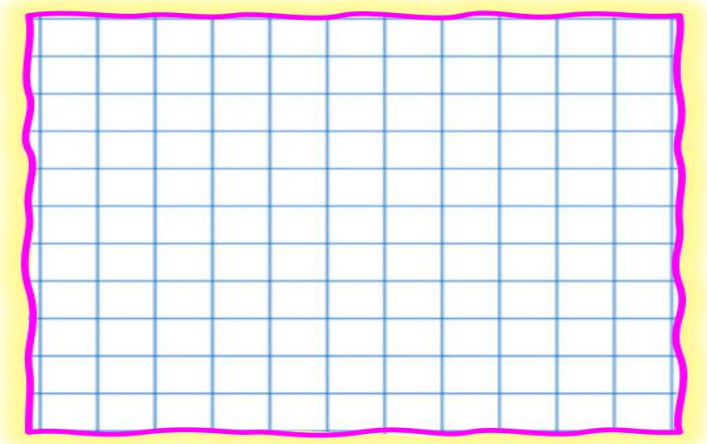
Show your work and cross off your units

What is Joes speed if he walked a steady 5 km in one hour?



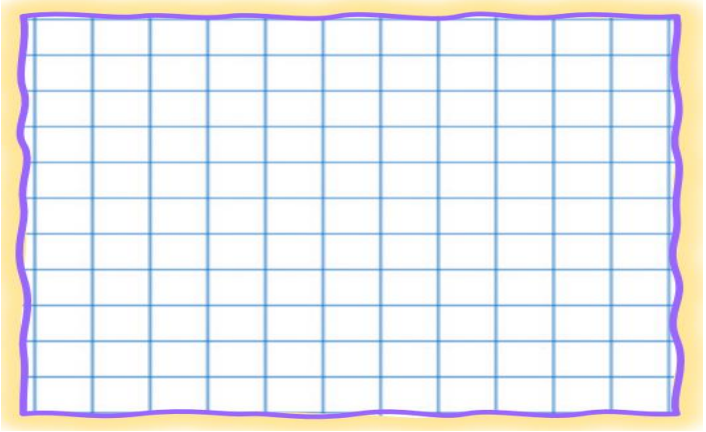
Show your work and cross off your units

Juan traveled 300km in 6hrs. Find his average speed in km/h.



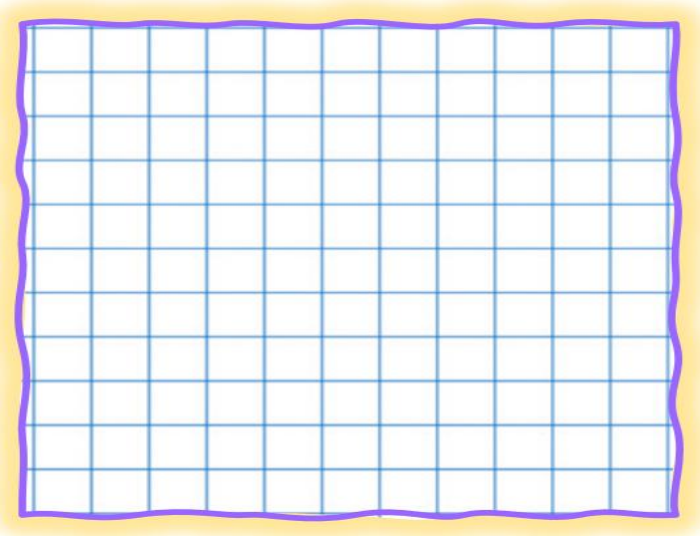
Show your work and cross off units

Marlene drove 500 km at an average speed of 50 km/h? How long did she drive?



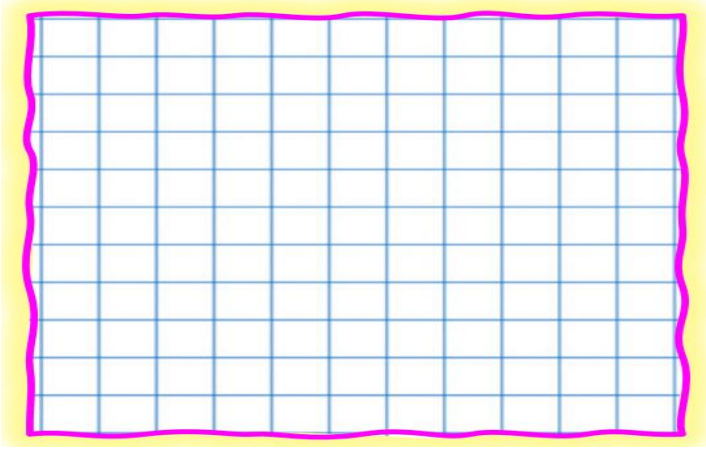
Show your work and cross off units

Sofia can run a distance of 100 meters in 20 seconds. Find the speed of Sofia in m/s.



Show your work and cross off units

An elderly woman goes on a trip and drives the first 120 km in 2 hrs and then picks up the pace and drives the next 180 km in 4 hrs.
-What is her average speed for the entire trip in km per hour?



Part 3 Lesson 2 Displacement/Velocity

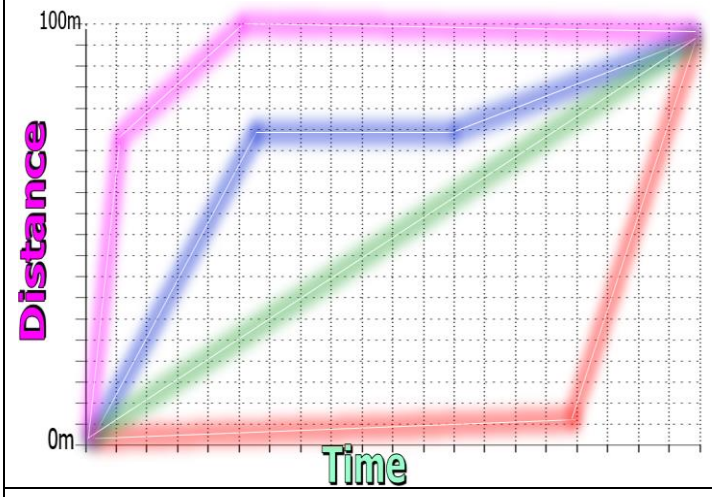
Catching the Violators Name:_____

Distance Feet	Divided By	Time (Sec)	Multiplied by	Feet to sec. to mph conv.	Equals	Mph Miles per Hour
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	
300	/		X	.681	=	

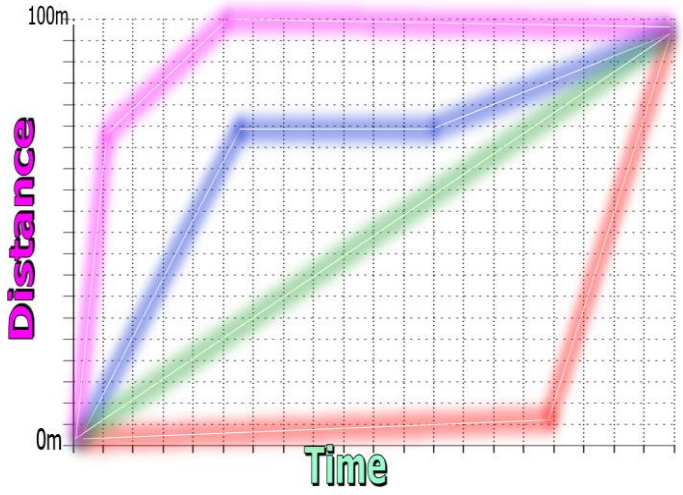
Total Average =_____

Add all of the miles per hour gathered and divide it by the number of cars to get an average mph. Was it over the speed limit? Do we have a speeding problem near the school?

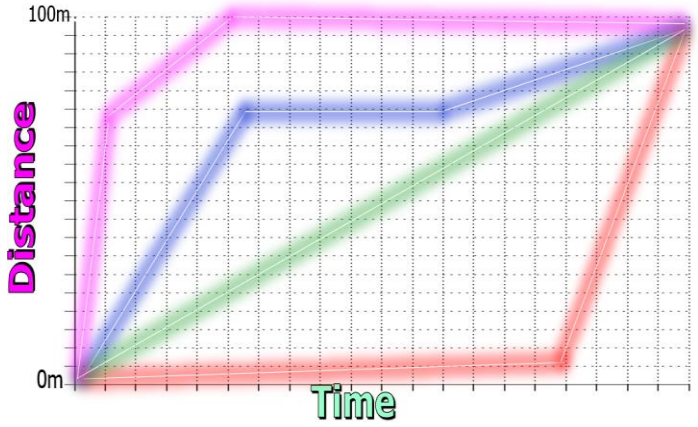
Which colored line is correct for the following description? A sprinter runs as fast as she can and then trips to the ground. She wipes the dust off and then walks to the finish line.



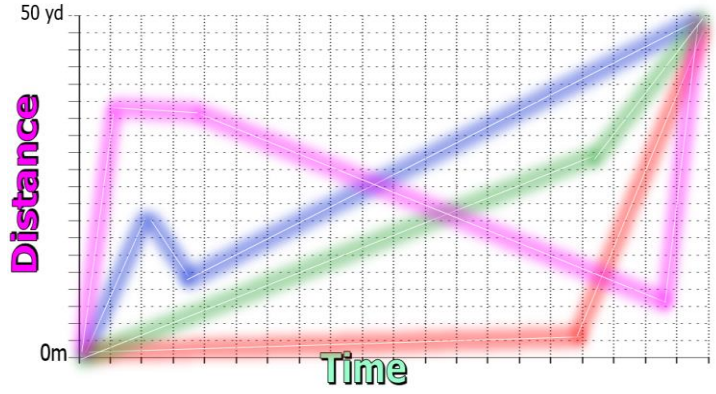
Which colored line is correct for the following description? A train decides to take the slow and steady approach to getting up the tallest mountain in Sodor.



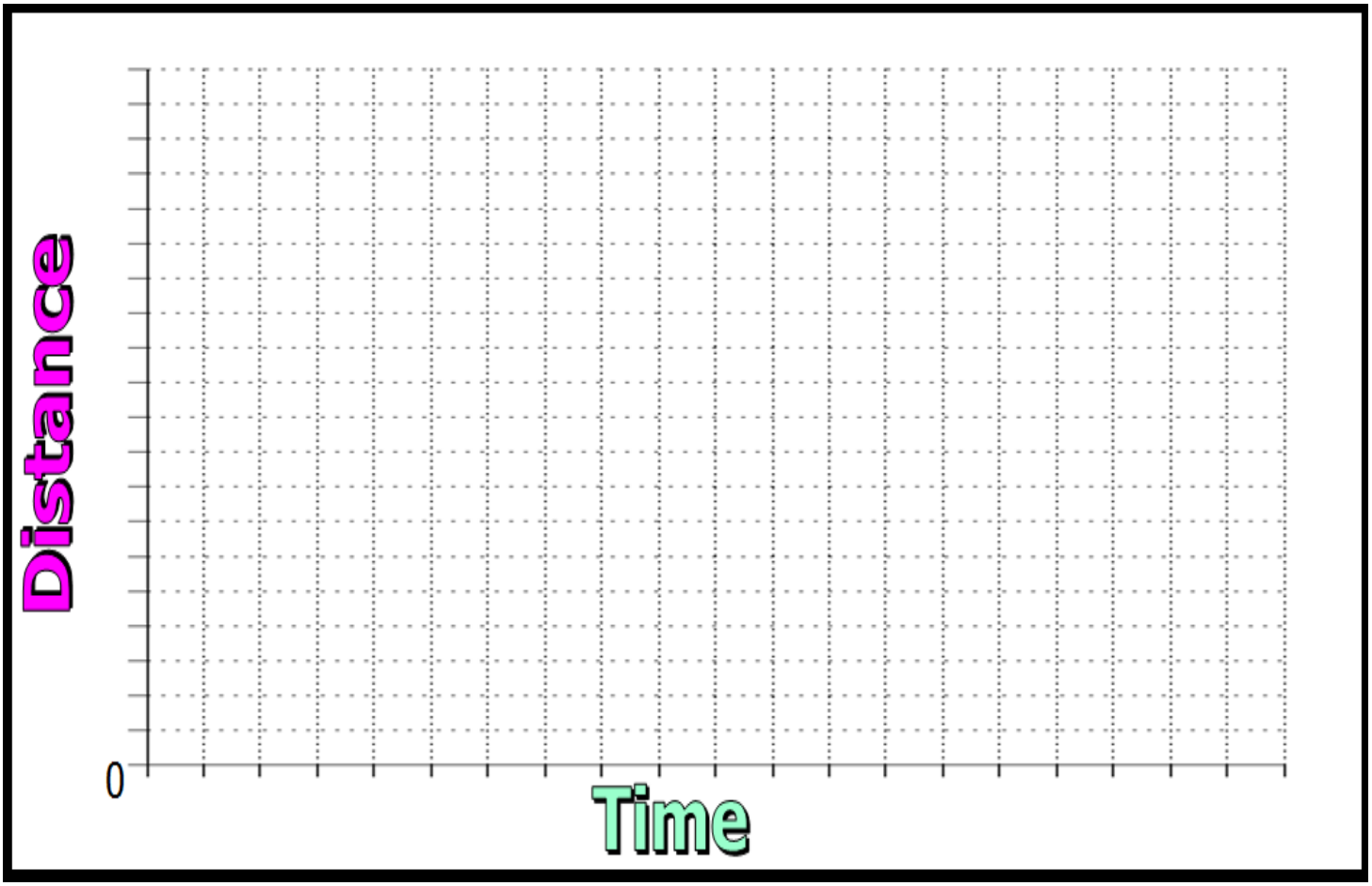
Which colored line is correct for the following description? A Patrol Officer slowly travels on the interstate and is then called to an emergency where he/she races away.



Which colored line is correct for the following description? A running back runs for the first down marker, is hit, fumbles the ball back ten yards, picks up his fumble and runs for a TD.



Please create your own story and then graph it demonstrating how a person or objects distance changes over time below.



Use the chart on the right to answer the questions.

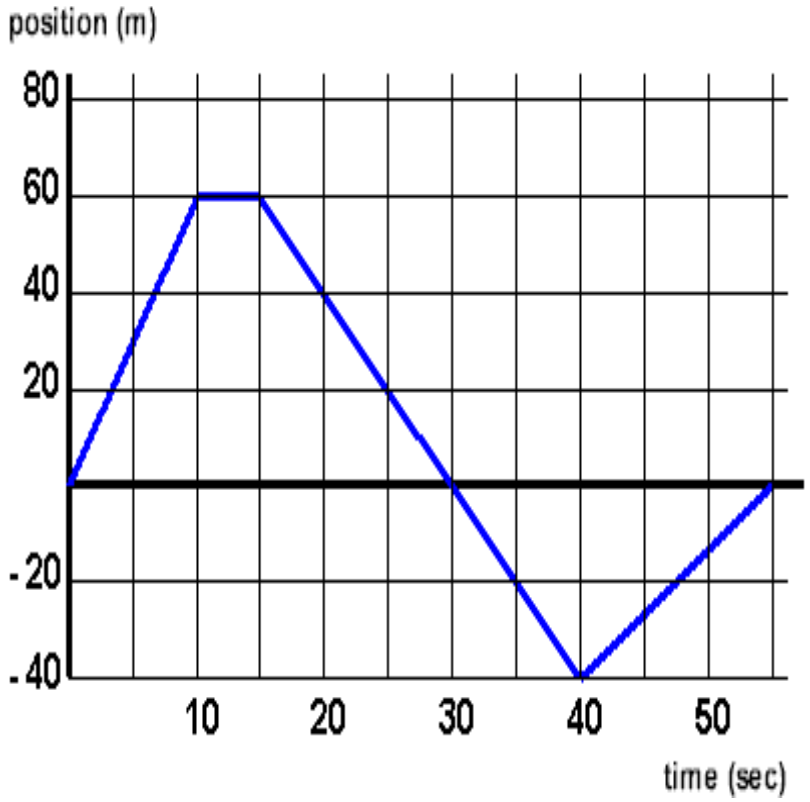
How far did the car travel in the first 15 seconds?_____

A what time did the car come to a stop and begin backing up?_____

When did the car accelerate the second time? _____

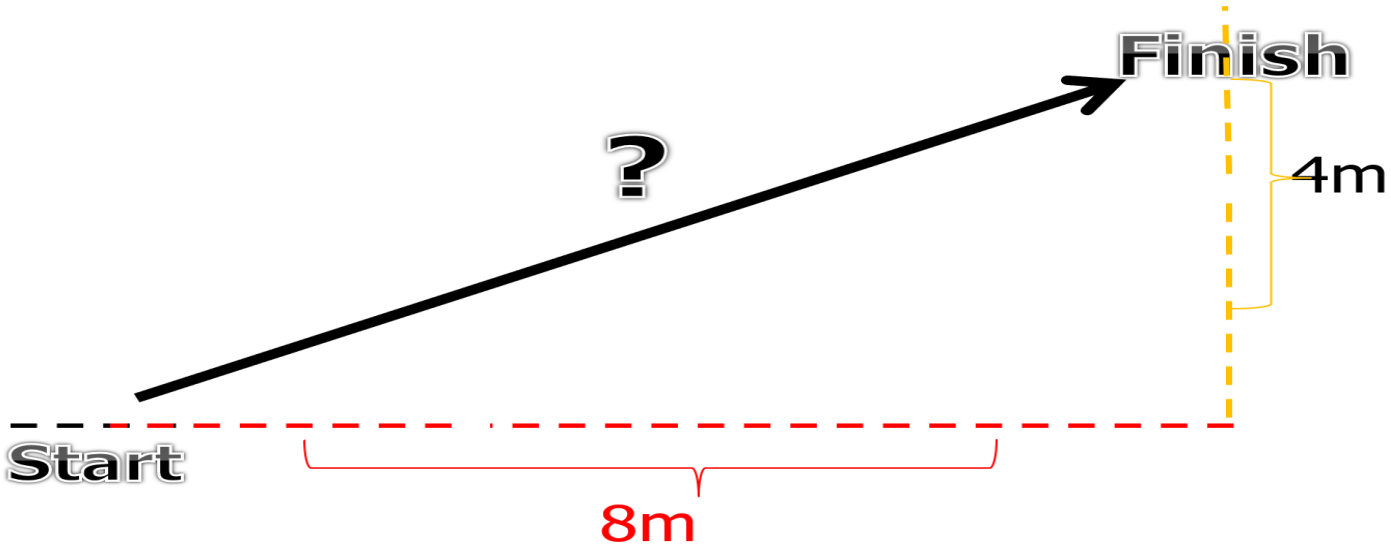
Did the car end up where it started. Use the space beneath the chart to explain with a drawing.

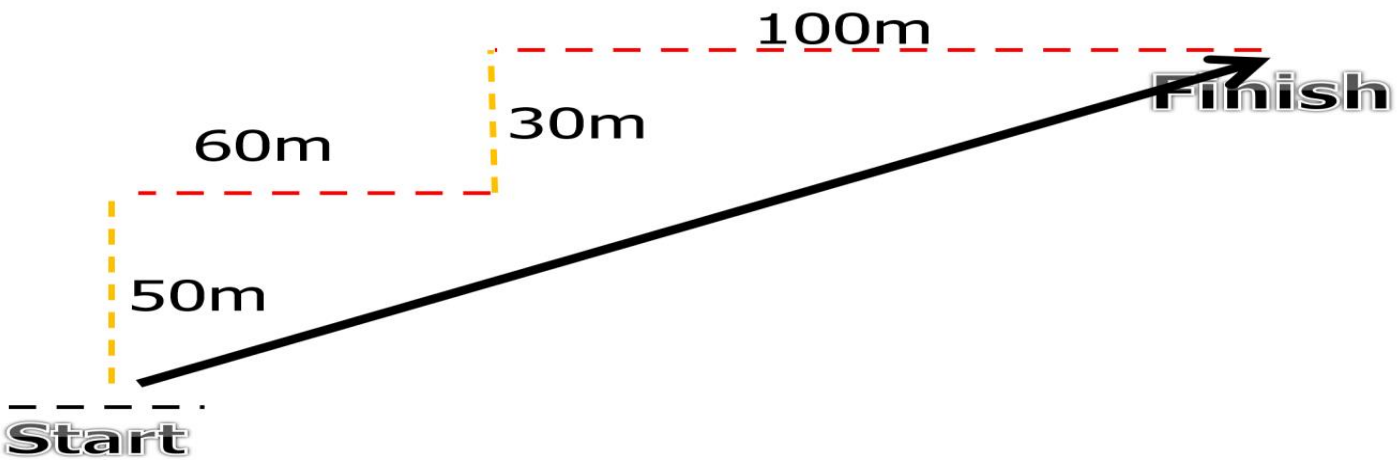
Shade the positive acceleration a color and negative acceleration / deceleration a color and label with a key?

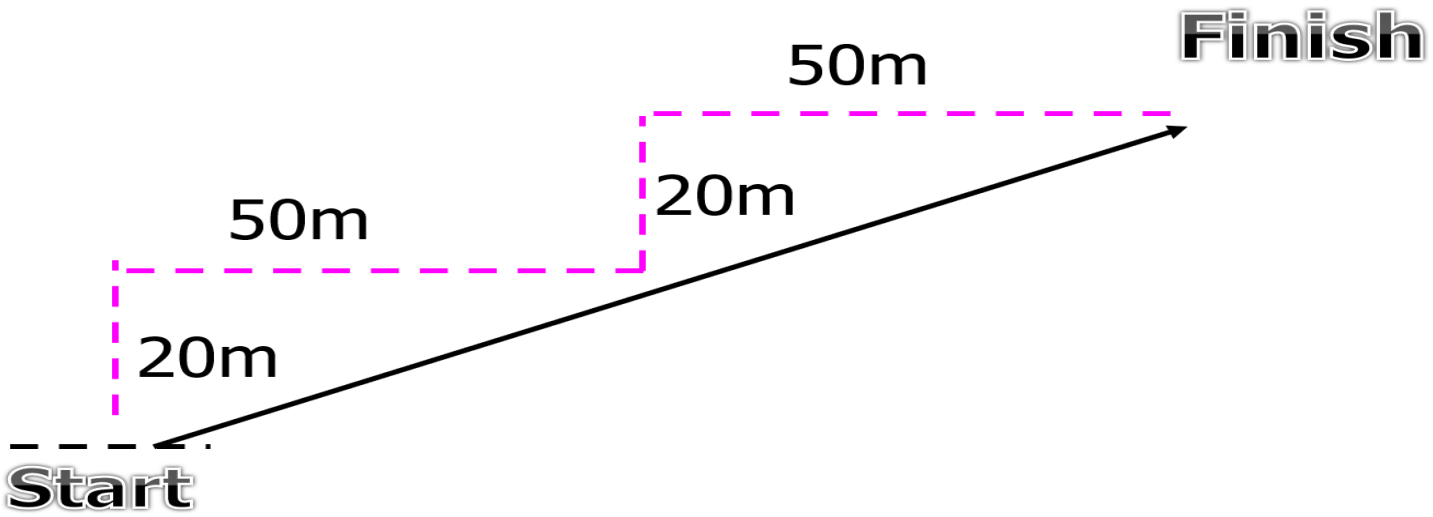


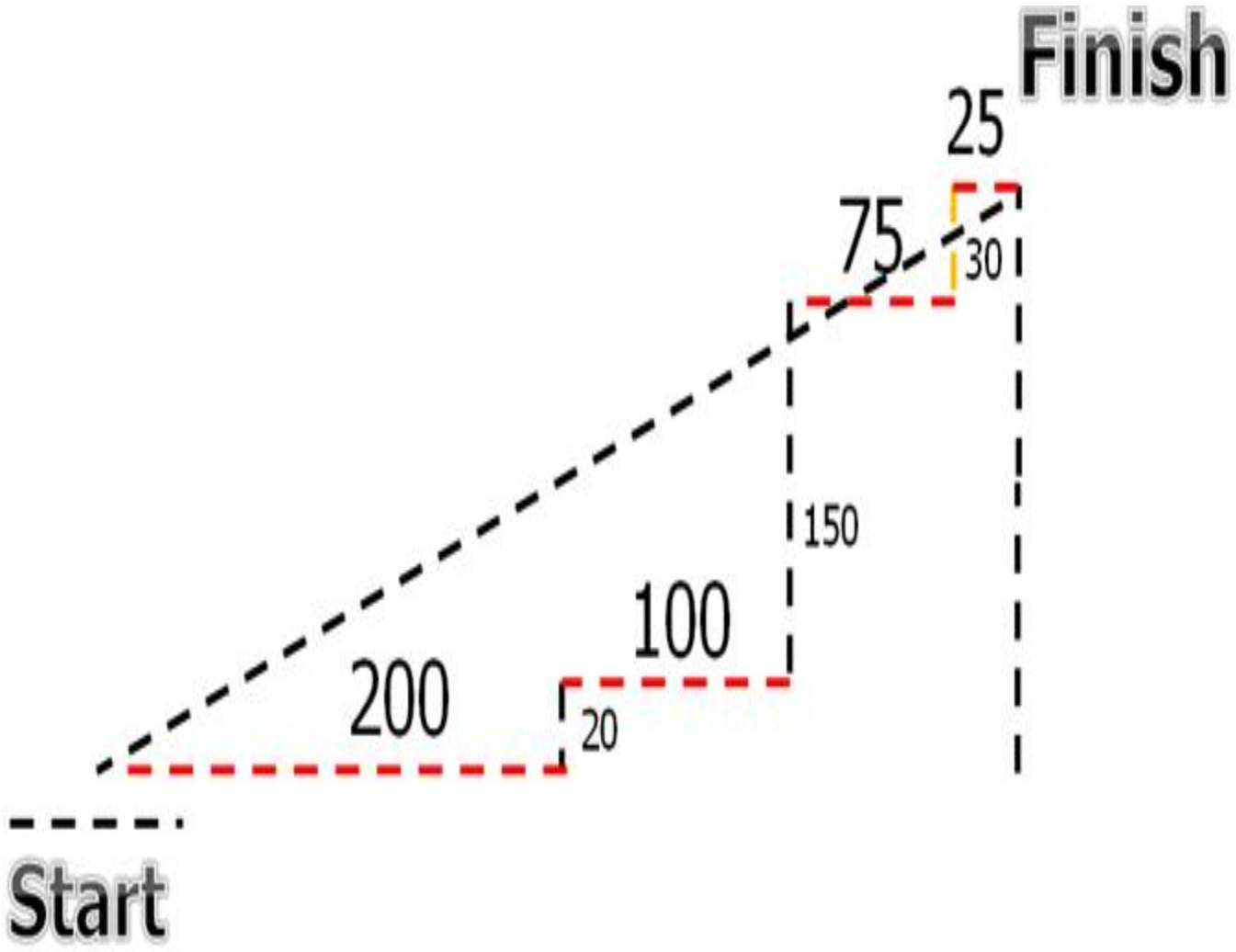
Acceleration □ Deceleration □

Velocity = (distance / time) and _____.
Find the Displacement / Hypotenuse. Use Pythagorean Theorem $A^2+B^2=C^2$



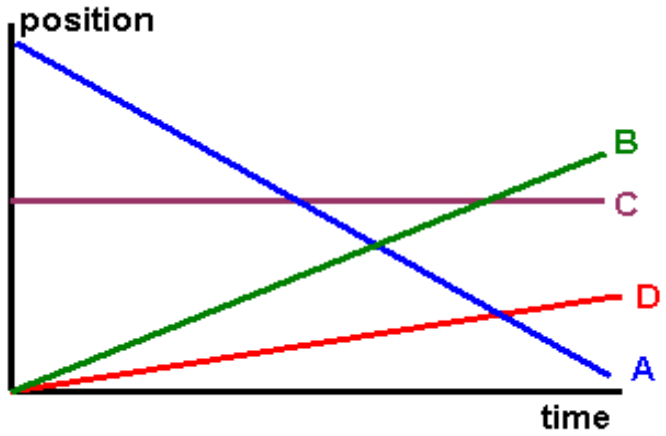






Part 3 Lesson 3 Velocity

Please use the chart below to answer the questions



Which letter represents a person just sitting for a minute?

Which shows running forward / positive direction?

Which shows walking forward / positive direction?

Which shows riding a bike in the negative direction?

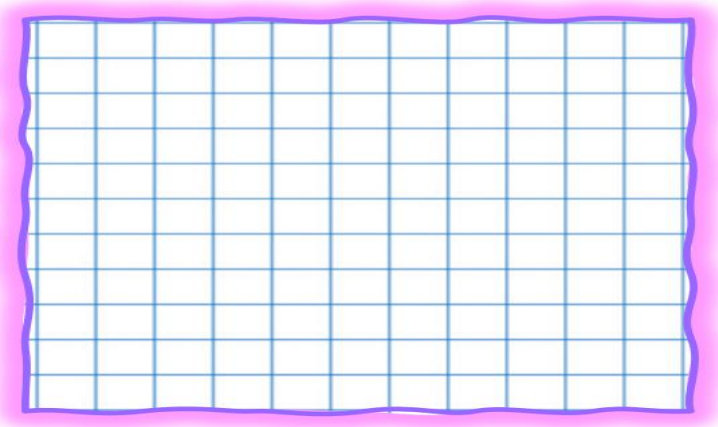
Classwork! The following problems can be completed together when covered in class. Please show your work.

Time: A measuring system used to sequence events, to compare the durations of events and the intervals between them, and to quantify the motions of objects?

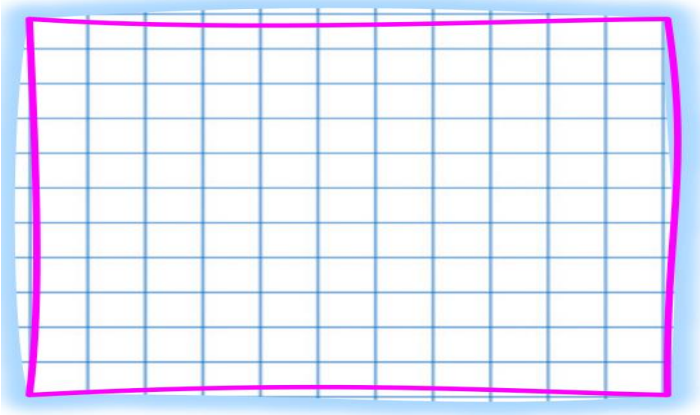
Velocity: The rate at which an object changes its position. (m/s/Direction)

Speed: A measure of motion, = distance divided by time. D/T (m/s)

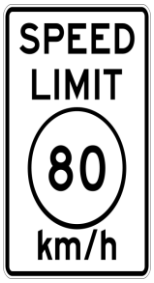
It took Lightning McGreen 2.5 hours to travel 600 kilometers.
How fast was he going in Kilometers an hour?



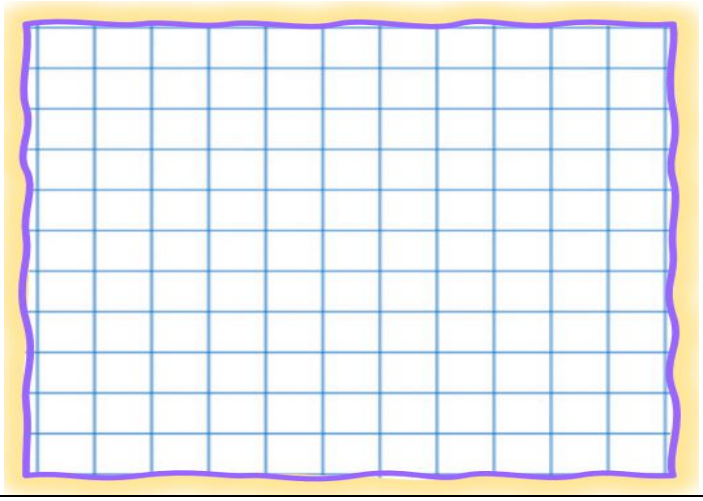
It took Ms. Rally 4 hours to travel 165 kilometers due North.
What was the velocity of her car in Kilometers an hour?



What is the speed if distance is 340 km and the time was 3 hours? Was Jater speeding?

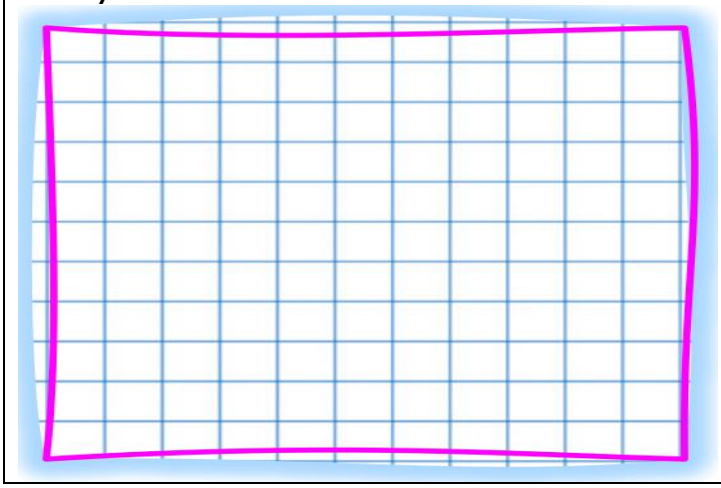


How far did Doc Budson travel if he was going 60 kilometers an hour for 4 straight hours?



What is the speed if a runner runs a distance of 400 meters 43 seconds?

Show your work and Units!



Make a word problem here and have a peer solve it.

Types of Velocities

-Constant Velocity: Object _____change direction or speed. An object moving at constant velocity would moving in a straight line at a _____ speed.

-An example would be an asteroid or a comet.

-Instantaneous Velocity: Object _____in direction and speed at a particular point in time.

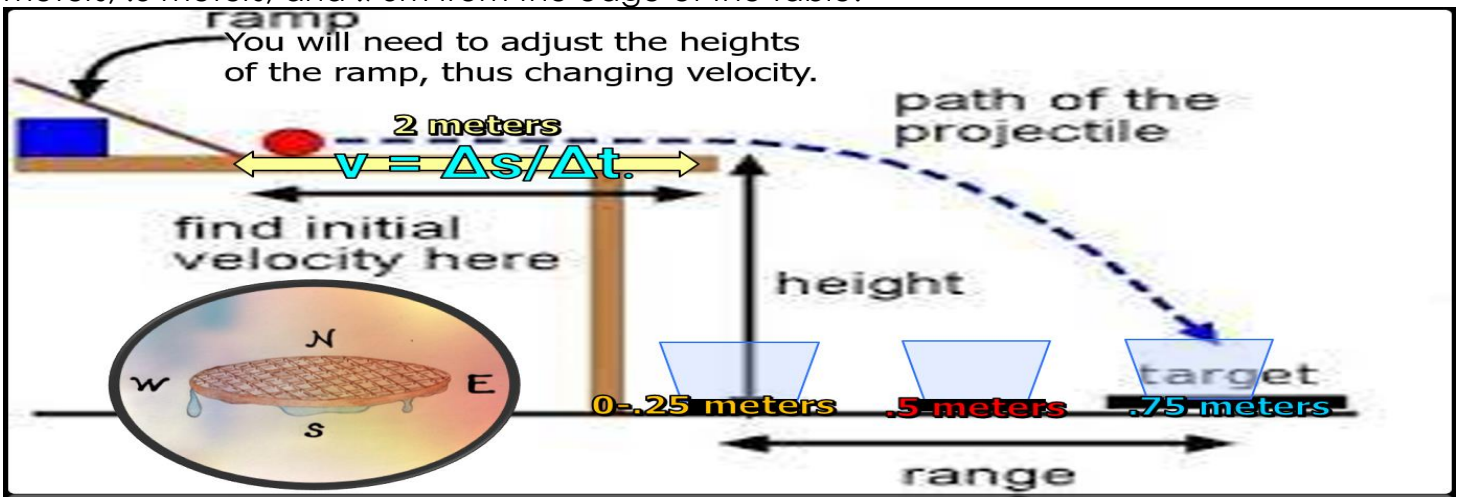
-Changing Velocity: Object changes in _____ or _____.

-This type of velocity is also considered to be acceleration

Terminal Velocity: Objects that fall through the _____. This is caused by changes due to _____ resistance.

-Gravity causes the object to accelerate towards the ground. The resistance of the medium through which it is falling prevents further acceleration.

Find the Velocity of the ball over 2 meters. What is its velocity when it lands in the bucket .25 meters, .5 meters, and .75m from the edge of the table.



v = Δs/Δt.

v = Δ1m/Δ __(time in seconds)

.25m Target	Velocity	=	Δ2m	Divided by	Δ _____(time in seconds)	V= m/s	Direction N, E, S, W
.50m Target	Velocity	=	Δ2m	Divided by	Δ _____(time in seconds)	V= m/s	Direction N, E, S, W
.75m Target	Velocity	=	Δ2m	Divided by	Δ _____(time in seconds)	V= m/s	Direction N, E, S, W

How did the ramp height have to change? Why?

Part 3 Lesson 4 Acceleration

Acceleration = The rate of _____ in velocity. (m/s^2) Δ =_____

The final velocity – the starting velocity, divided by t_____.

also... $a = (v_2 - v_1)/(t_2 - t_1)$

Deceleration – To s_____ velocity.

The same formula but value will be n_____.

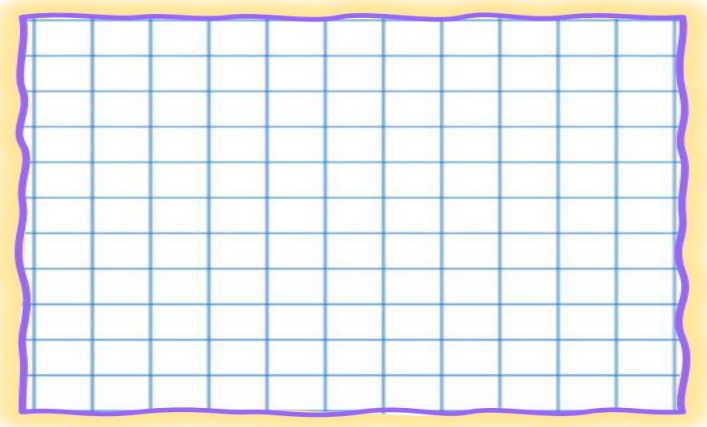
Ratman's rat mobile is traveling at 80m/s **North** when it turns on its rocket boosters accelerating the bat mobile to 200 m/s in 4 seconds. What's the rat mobiles acceleration?
Remember, the SI Unit is m/s^2

A unicyclist was traveling at 2 m/s **South** and speed up to 6 m/s in 3 seconds. What was the acceleration?
Remember, the SI Unit is m/s^2

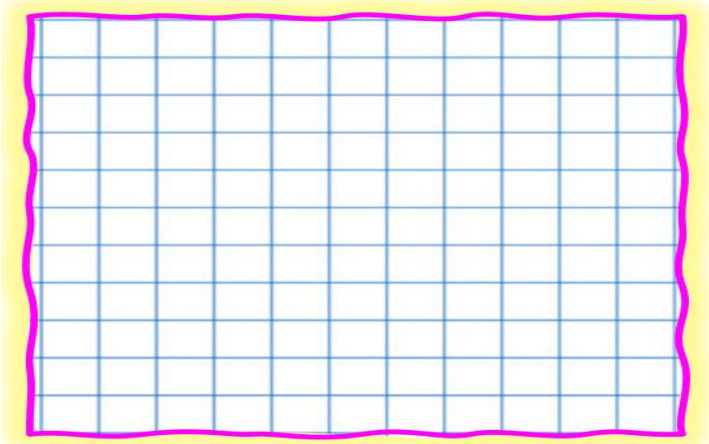
A flaming bagpiping unicyclist was trying to take down an Imperial AT-AT.

- He was traveling at 1.5 m/s in a counterclockwise direction when he sped up to 3 m/s in 6 seconds. He then launched his harpoon gun and tow cable.
- What was his acceleration?

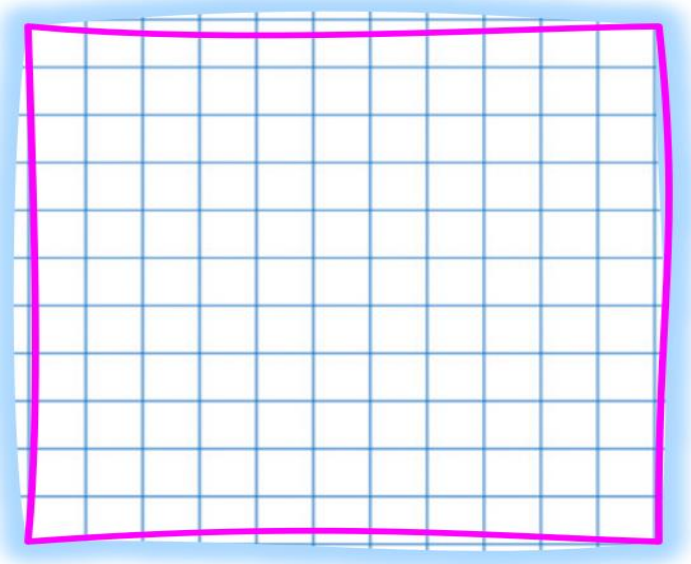
A car traveling at 10 m/s starts to decelerate steadily. It comes to a complete stop in 20 seconds.
What is its acceleration / deceleration?



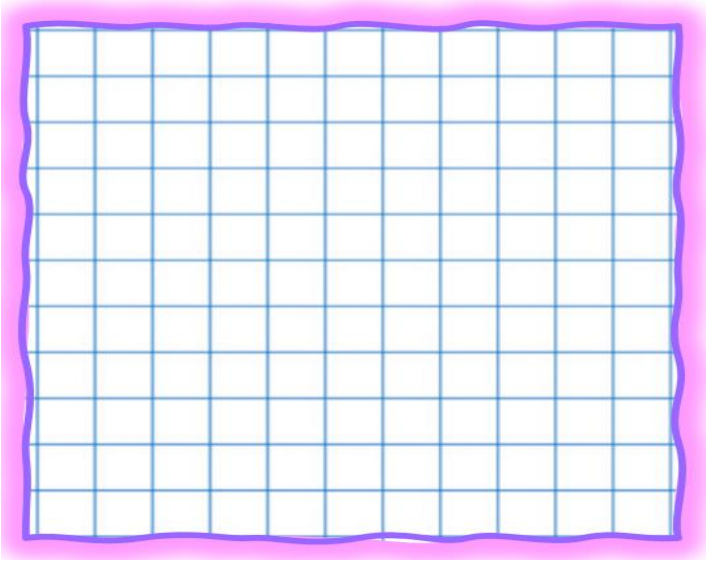
Lightning McGreen was traveling 200 m/s **West** when he slowed to 50 m/s in 10 seconds. What was his deceleration?
Remember, the SI Unit is m/s²



If a car traveling at a velocity of 80 m/s/South accelerated to a velocity of 100 m/s/South in 5 seconds, what is the cars acceleration?
Please show your work!
Remember, The SI base unit m/s²



The same car traveling 100 m/s/ South decelerates to a velocity of 40 m/s/South in 3 seconds. What is the cars deceleration?
Please show your work!
Remember, The SI base unit m/s²



Part 3 Lesson 5 Momentum

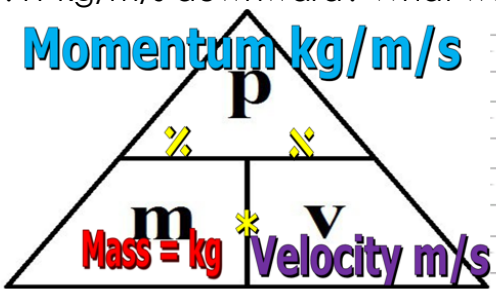
Momentum: A measure of the motion of a body equal to the product of its mass and v_____.

$$p = m \cdot v$$

What is the momentum of Fred if he weighs 3000 kg and is traveling with a velocity of 20 m/s / West? **Show your work and Units for all questions!**

Chick Licks weighs 1000 kg and had a velocity of 20 m/s North. What was his momentum?

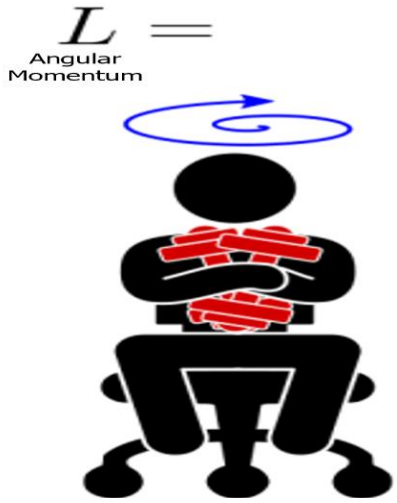
Vector dropped from a plane with his wingsuit. He has a mass of 50 kg and a momentum of 10.41 kg/m/s downward? What was his velocity through the air?

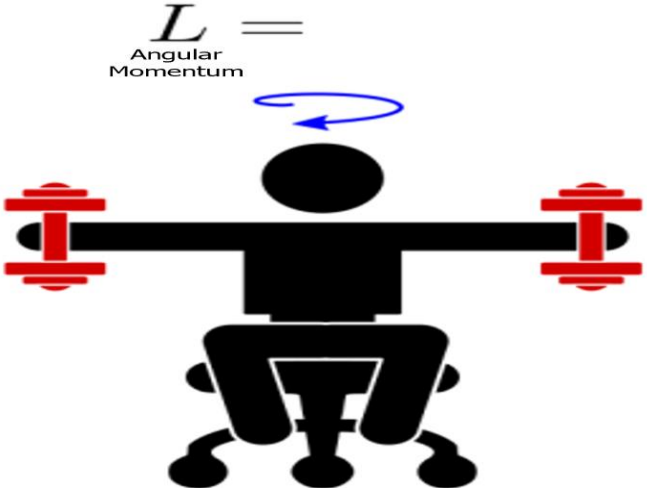


Law Conservation of Momentum: The momentum of an object is the product of its m_____ and its _____.

Angular momentum: _____ objects tend to remain rotating at the same speed / direction unless acted upon.

When you draw the weights inward, your moment of inertia _____, and your velocity _____ (spin faster).





#1)

I.)

F.)

#2)

I.)

F.)

#3)

I.)

F.)

Amount of Work (w) done depends on two things:

The amount of _____ (F) exerted.

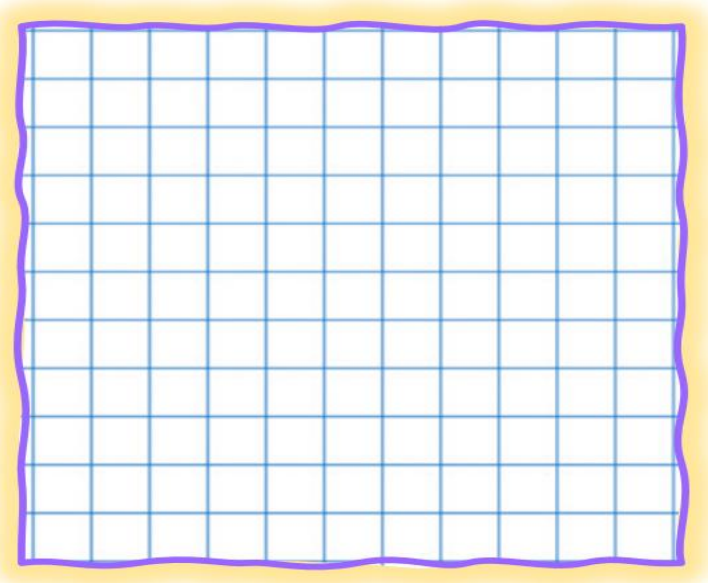
The _____ (d) over which the Force is applied.

Joule: Unit of _____, work, or amount of _____.

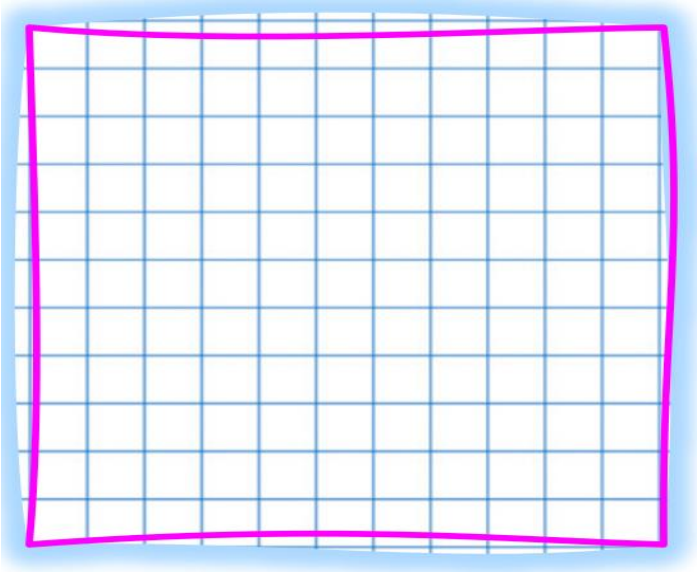
Equal to the energy expended in applying a force of one _____ through a distance of one _____.

A model airplane exerts 0.25 newtons over a distance of 10 meters.
How much work was the plane doing? **Show your work and Units!**

A bulldozer exerts 50,000 newtons over a distance of 6 meters.
How much work was bulldozer doing? **Show your work and Units!**



10,000 Joules of work were accomplished by a group of sled dogs exerting 400 newtons.
How far did the dogs travel in meters?
W = F times D



It took Speedy Pete 5 hours to travel 1,000 kilometers. How fast was he going in Kilometers an hour?

**Lisa's Limo's is traveling at 10m/s West when she hits the gas and accelerates the limo to 20 m/s in 5 seconds.
What's Lisa's acceleration?**

A Four-Wheeler uses 10,000 newtons over a distance of 10 meters. Work = Force times Distance. How much work was the four-wheeler doing?

A soap box car that weighed 85 kilograms traveled 1500 meters South in 295 seconds. (1500 m = 1.5 km, 295 s = .081hr)

- What was the velocity of the car in km/hr?
- What was the momentum of the car?

A soap box car traveled at a speed of 18.51 m/s for .081 hours (18.51 m/s = .01851 km)

- How long was the track?

While traveling down the course, the soap box car going 5 m/s skidded out of control around a turn to a speed of 2.3 m/s for a period of 3 seconds. The driver almost fell out on the turn.

- What was the deceleration of the car?
- What's the name for the fictious force that the driver experienced?

The soap box car exerted 8,500 Newtons along the 1500 meter track.

- What was the work accomplished?

Notes from the Unit

Across

4. Angular momentum: _____ objects tend to remain rotating at the same speed / direction unless acted upon.
5. _____ Velocity: Object changes in speed or direction. This type of velocity is also considered to be acceleration
7. Momentum = Mass times _____
8. Acceleration = The final velocity – the starting velocity, divided by _____
13. Velocity = Speed (distance / time) and d_____.
15. _____ Velocity: Object changes in direction and speed at a particular point in time.
17. Distance = _____ * time (Multiply)
18. Time = Distance _____ by Speed
19. Speed = _____ divided by time
21. A measure of the motion of a body equal to the product of its mass and velocity.
23. _____ = The rate of change in velocity. (m/s^2) The final velocity – the starting velocity, divided by time. also... a = (v2 – v1)/(t2 – t1)

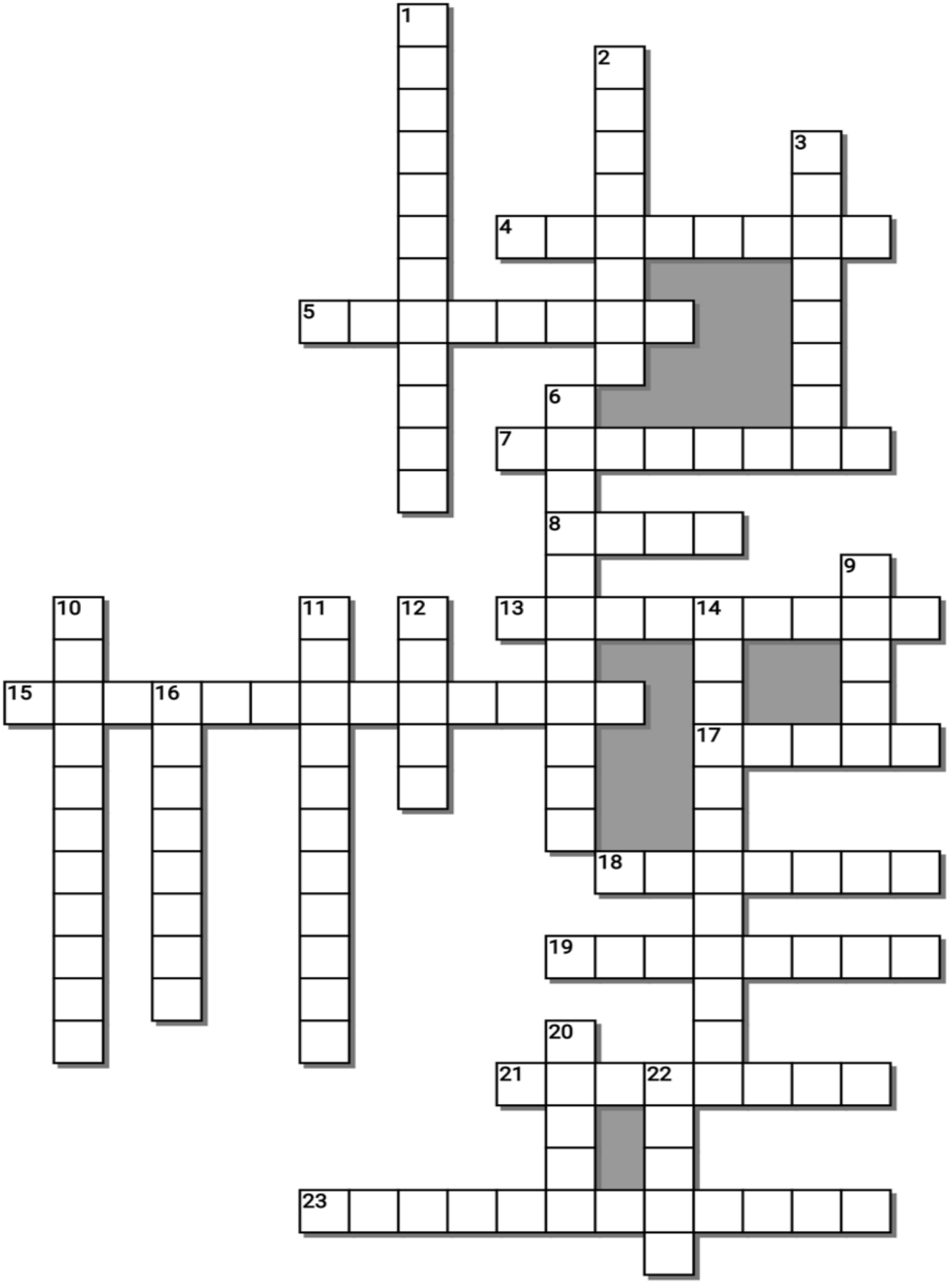
Down

1. _____ = To slow velocity.
2. Acceleration = The final velocity – the _____ velocity, divided by time
3. _____ Velocity: Object does not change direction or speed. An object moving at constant velocity would moving in a straight line at a steady speed. An example would be an asteroid or a comet.
6. _____ Force: (Does not exist) The Force that makes you feel that a force is acting outward on a body moving around a center, arising from the body's inertia. Not a real force!
9. Amount of Work (w) done depends on two things: F_____ times Distance
10. _____ Force: Force that acts on a body moving in a circular path and is directed toward the center and around which the body is moving.
11. _____ theorem, the well-known geometric theorem that the sum of the squares on the legs of a right triangle is equal to the square on the hypotenuse (the side opposite the right angle)—or, in familiar algebraic notation, a2 + b2 = c2.
12. Acceleration = The _____ velocity – the starting velocity, divided by time
14. Law C_____ of Momentum: The momentum of an object is the product of its mass and its velocity.
16. _____ Velocity: Objects that fall through the atmosphere. This is caused by changes due to air resistance.
20. A unit of energy, work, or amount of heat. Equal to the energy expended in applying a force of one newton through a distance of one meter.
22. For a collision occurring between two objects (cars) the total momentum of the two objects before the collision is _____ to the total momentum of the two objects after the collision.

----------Teacher can remove this word bank to make puzzle more challenging----------

Possible Answers

ACCELERATION, CENTRIFUGAL , CENTRIPETAL, CHANGING , CONSERVATION, CONSTANT, DECELERATION, DIRECTION, DISTANCE, DIVIDED, EQUAL, FINAL, FORCE, INSTANTANEOUS , JOULE, MOMENTUM, PYTHAGOREAN, ROTATING, SPEED, STARTING, TERMINAL, TIME, VELOCITY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Forces in Motion Lesson 6

Name:

1-20 = 5 pts **Show your work and Units!**
*20-*25 * = Bonus + 1 pt,
(Secretly write owl in correct space +1 pt)
Final Question = 5 pt wager

Score ____ / 100

CENTIPEDE	SPEEDY PETE	HERE WE GO	MOVIN AND GROOVIN	RACE FLIX Bonus round 1 pt each
1)	6)	11)	16)	*21)
2)	7)	12)	17)	*22)
3)	8)	13)	18)	*23)
4)	9)	14)	19)	*24)
5)	10)	15)	20)	*25)

Final Question: 5 Point Wager ____=WAGER _____

Part 3 Forces in Motion

Name:
Due:

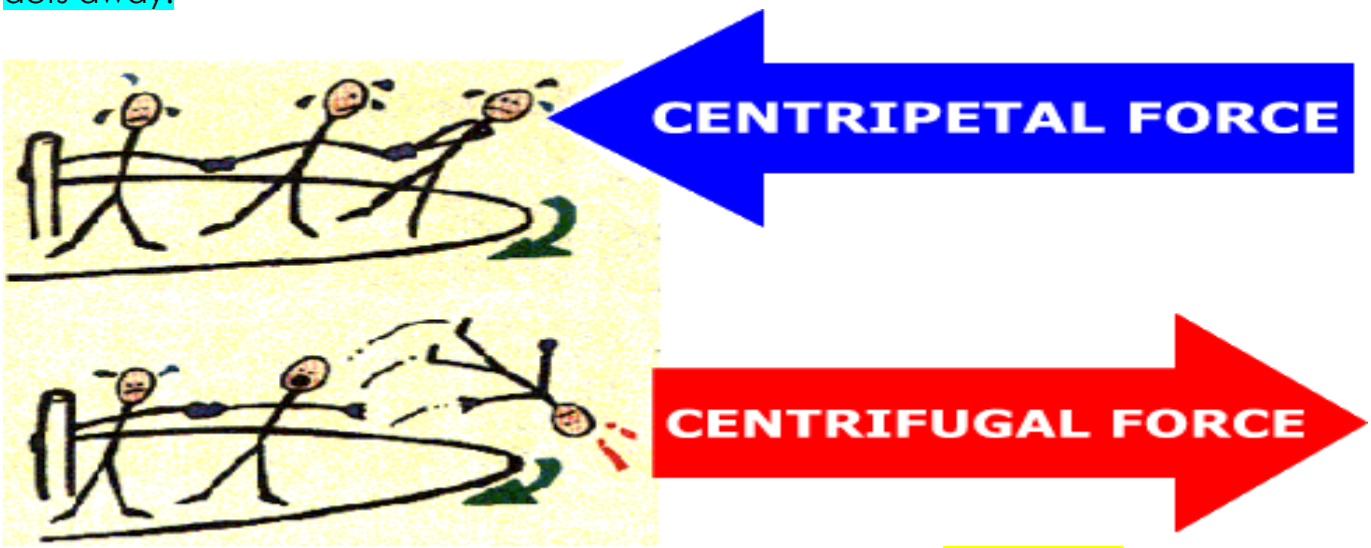
I am aware that I need to show all mathematical work in an organized manner to receive any credit for a question that involves calculations of any kind. Omitting / leaving out the units in the problem or at the end will also result in zero credit ◊ _____

- Centrifugal Force: (Does not exist) The Force that makes you feel that a force is acting outward on a body moving around a center, arising from the body's inertia. Not a real force!

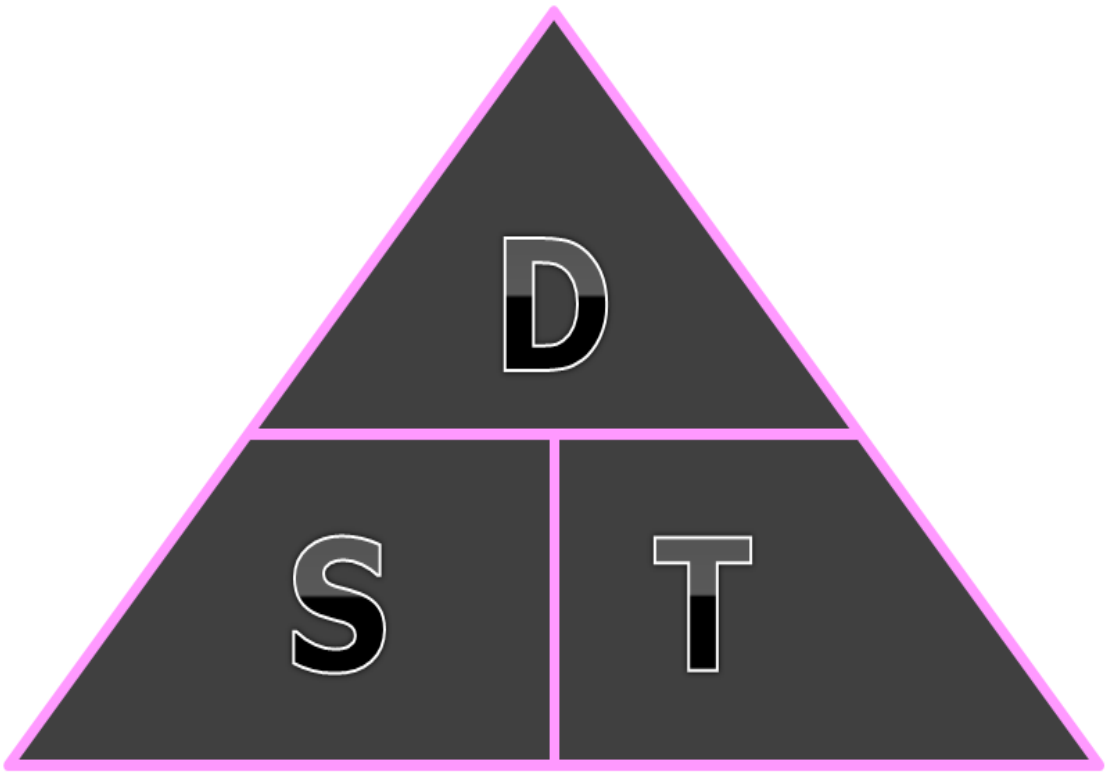
- Centripetal Force: Force that acts on a body moving in a circular path and is directed toward the center and around which the body is moving.

Which is centrifugal force (fictitious), and which is a centripetal force?

Response=
Centripetal Force was how challenging it is to hold on. Centrifugal is the force pulling your hands off the carousel. The centrifugal force over powered the centripetal force and the person went flying off in a straight line. Centripetal acts towards the center, while centrifugal acts away.



- Speed: A measure of motion, = distance distance by time. D/T



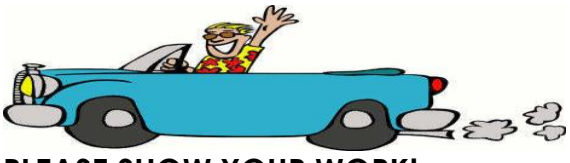
- Distance = Speed * time (Multiply)
  Speed = Distance divided by time
  Time = Distance divided by Speed

What is the speed of a car that takes two hours to drive 80 miles?

2hr/80m = 40 mph

How far did I drive if I traveled 82 km/hr for 4 hours?

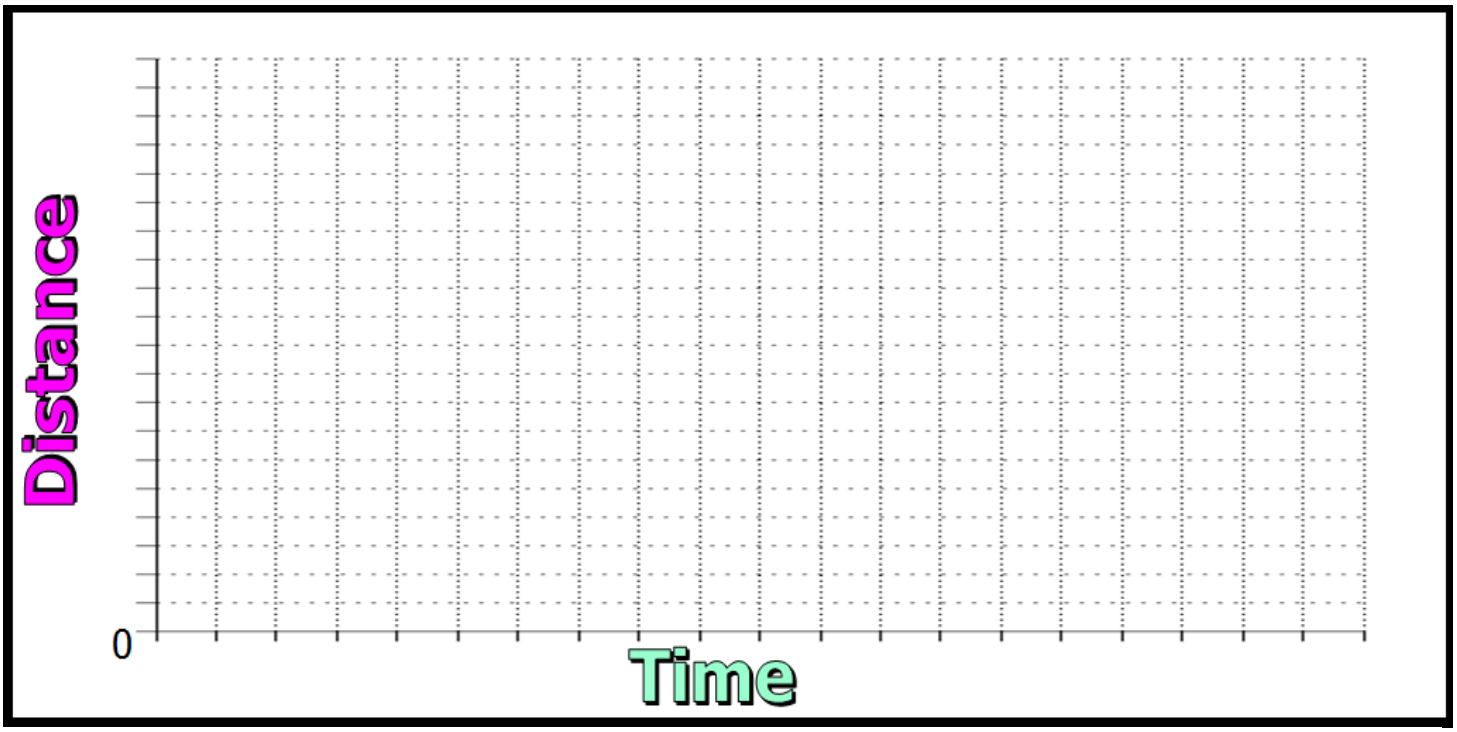
82km times 4 hours = 328km/h



PLEASE SHOW YOUR WORK!

Please create your own story and then graph it demonstrating how a person or objects distance changes over time.

Cool Story: Answers will vary but the story and graph should make sense for how an object changes over time.

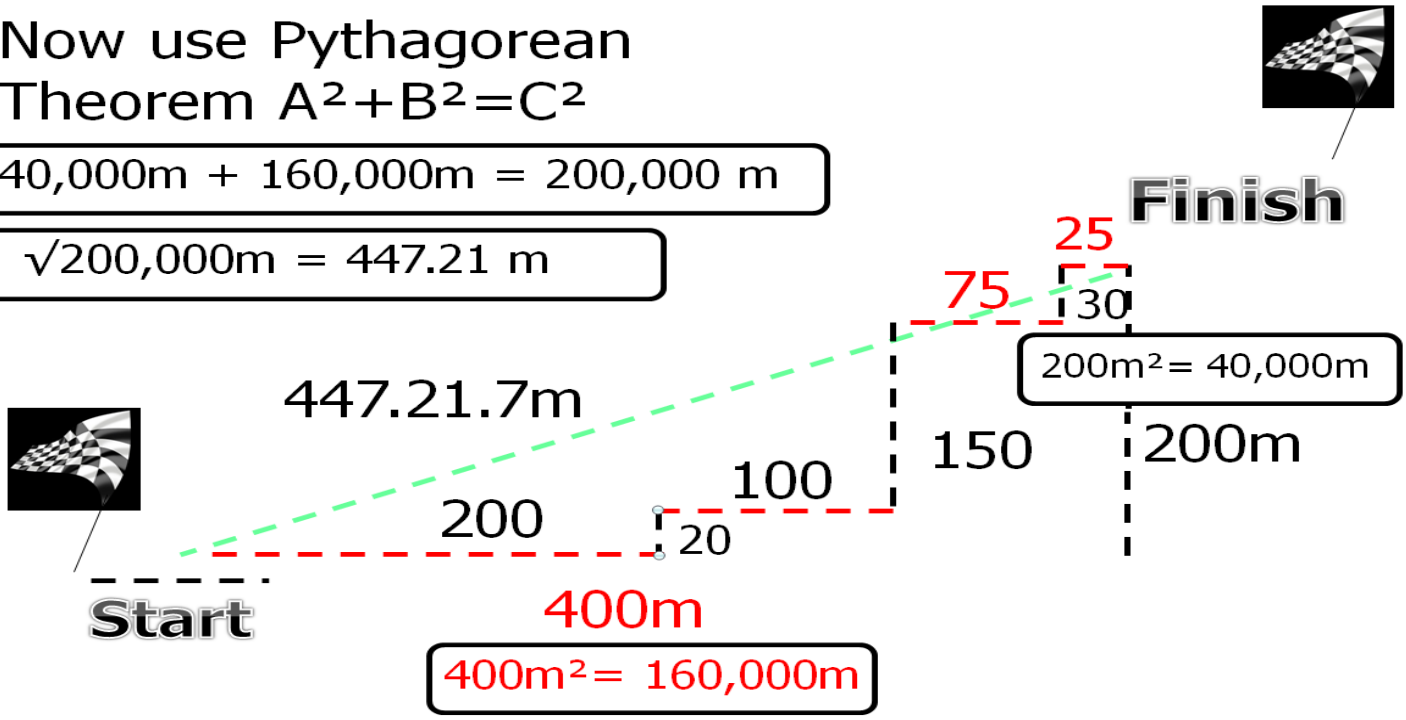


Find the displacement.

Now use Pythagorean Theorem $A^2+B^2=C^2$

40,000m + 160,000m = 200,000 m

√200,000m = 447.21 m



Use the chart on the right to answer the questions.

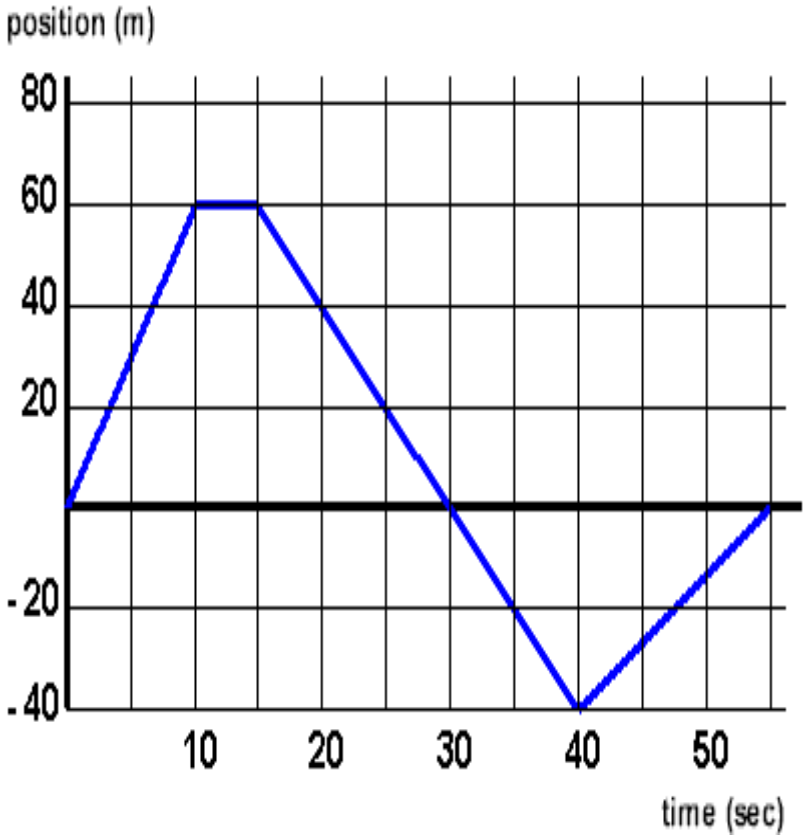
How far did the car travel in the first 15 seconds? 60 m

A what time did the car come to a stop and begin backing up? At 15 seconds

When did the car accelerate the second time? After 40 seconds

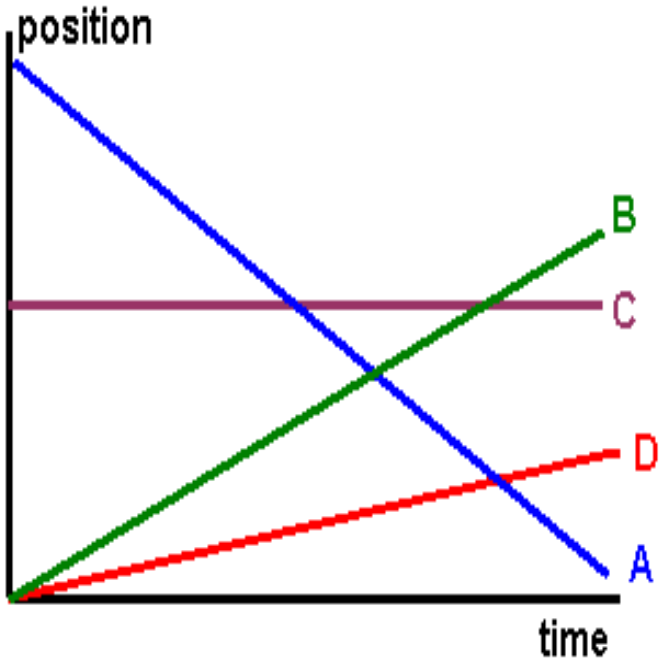
Did the car end up where it started. Use the space beneath the chart to explain with a drawing. Yes, the car accelerated, and then backed up and then accelerated to where it started

Shade the positive acceleration a color and negative acceleration / deceleration a color and label with a key?
If going in a positive direction it is acceleration, if going negative is negative acceleration or deceleration



Acceleration ☐ Deceleration ☐

Please use the chart below to answer the questions



Which letter represents a person just sitting for a minute? Line C

Which shows running forward / positive direction? Line B

Which shows walking forward / positive direction? Line B

Which shows riding a bike in the negative direction? Line A

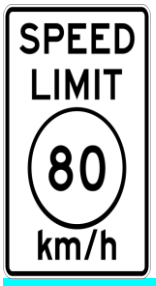
- Velocity = Speed (distance / time) and direction.
- velocity = Distance Divided by Time
- Acceleration = The rate of change in velocity. (m/s^2)
  The final velocity – the starting velocity, divided by time.
  also... $a = (v_2 - v_1)/(t_2 - t_1)$
- Deceleration – To slow velocity.
  The same formula but value will be negative.

Classwork! The following problems can be completed together when covered in class. Please show your work.

Time: A measuring system used to sequence events, to compare the durations of events and the intervals between them, and to quantify the motions of objects?
Velocity: The rate at which an object changes its position. (m/s/Direction)
Speed: A measure of motion, = distance divided by time. D/T (m/s)

It took Lightning McGreen 2.5 hours to travel 600 kilometers. How fast was he going in Kilometers an hour? Speed = Distance / Time Speed = 600 km / 2.5 h Speed = 240 km/h	It took Ms. Rally 4 hours to travel 165 kilometers due North. What was the velocity of her car in Kilometers an hour? Velocity = Distance / Time Velocity = 165km / 4 h Velocity = 41.25 km/h/North

What is the speed if distance is 340 km and the time was 3 hours? Was Jater speeding?



Speed = Distance / Time
Speed = 340km / 3 h
Speed = 113km/h
Yes, Jater was speeding

How far did Doc Budson travel if he was going 60 kilometers an hour for 4 straight hours?

Distance = Speed ● Time
Distance = 60km/h ● 4 h

- 60 km times 4 hours = 240 km

Check your work, 240/4 should be 60.

What is the speed if a runner runs a distance of 400 meters 43 seconds?

Speed = Distance / Time
Speed = 400m / 43s
Speed = 9.30 m/s

- 400m / 43s = 9.30 m/s

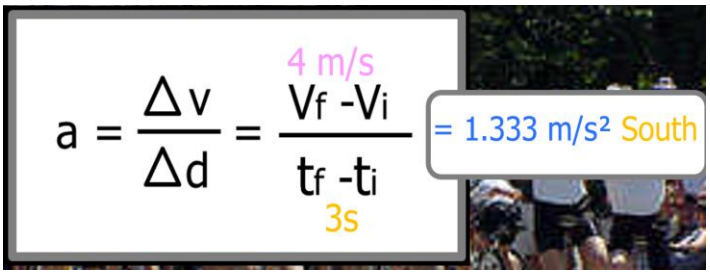
Make a word problem here and have a peer solve it.

Answers will vary

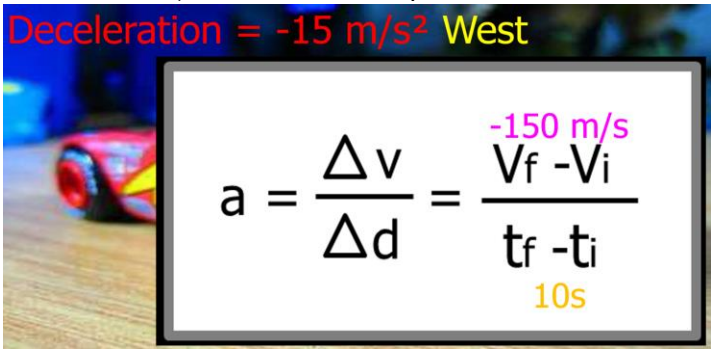
Ratman's rat mobile is traveling at 80m/s **North** when it turns on its rocket boosters accelerating the bat mobile to 200 m/s in 4 seconds. What's the rat mobiles acceleration?
Remember, the SI Unit is m/s²

- a = (Final velocity – starting velocity) / time.
- a = 200m/s -80m/s / 4 s =
- a = 120 m/s / 4 s = 30 m/s² North

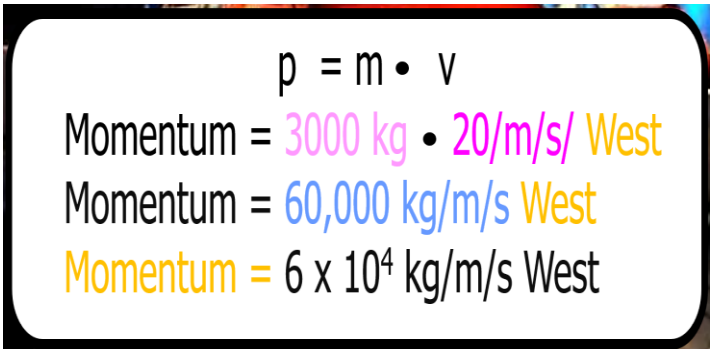
A unicyclist was traveling at 2 m/s **South** and speed up to 6 m/s in 3 seconds. What was the acceleration?
Remember, the SI Unit is m/s²

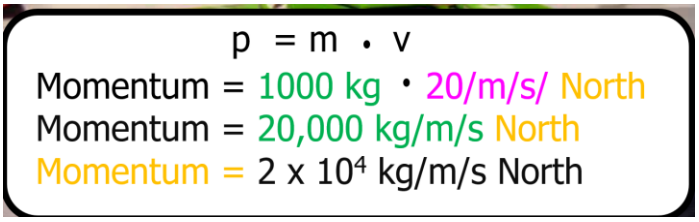


Lightning McGreen was traveling 200 m/s **West** when he slowed to 50 m/s in 10 seconds. What was his deceleration?
Remember, the SI Unit is m/s²



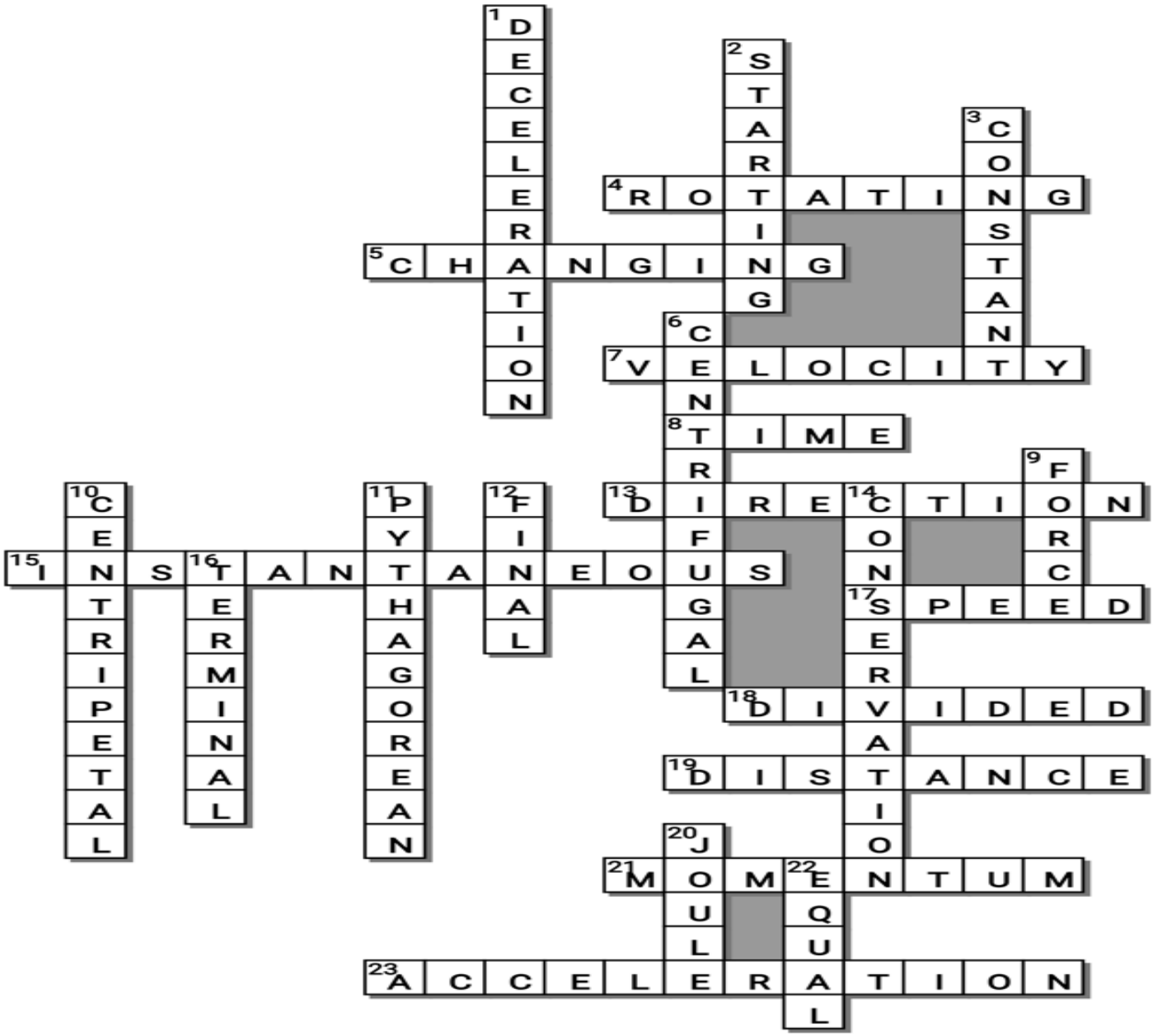
What is the momentum of Fred if he weighs 3000 kg and is traveling with a velocity of 20 m / s / **West**?



Chick Licks weighs 1000 kg and had a velocity of 20 m/s North. What was his momentum?  $p = m \cdot v$ Momentum = 1000 kg • 20/m/s/ North Momentum = 20,000 kg/m/s North Momentum = 2×10^4 kg/m/s North Momentum for car = 20,000 kg/m/s North	A model airplane exerts 0.25 newtons over a distance of 10 meters. Work = Force times Distance. How much work was the plane doing? • The plane will expend 2.5 Joules.
A bulldozer exerts 50,000 newtons over a distance of 6 meters. Work = Force times Distance. How much work was bulldozer doing? W = F * D W = 50,000 newtons * 6 meters W = 300,000 Joules	10,000 Joules of work were accomplished by a group of sled dogs exerting 400 newtons. How far did the dogs travel in meters? W = F times D – Work / Force = Distance – 10,000 J / 400 N = D D = 25 meters

If a car traveling at a velocity of 80 m/s/South accelerated to a velocity of 100 m/s/South in 5 seconds, what is the cars acceleration? Acceleration = The final velocity – the starting velocity, divided by time. 100 m/s/South – 80 m/s/South / 5 seconds Answer = 4 m/s²/South	The same car traveling 100 m/s/ South decelerates to a velocity of 40 m/s/South in three seconds. What is the cars deceleration? The formula is the same, but the value will be a negative. -Deceleration (final velocity – starting velocity) divided by time. 40 m/s/south – 100 m/s/south / 3 seconds Answer= -20 m/s²/ South

- Momentum: A measure of the motion of a body equal to the product of its mass and velocity.
  - Momentum = Mass times velocity
  - Law Conservation of Momentum: The momentum of an object is the product of its mass and its velocity.
  - Angular momentum: Rotating objects tend to remain rotating at the same speed / direction unless acted upon.
  - When you draw the weights inward, your moment of inertia decreases, and your velocity increases (spin faster).



Across

4. Angular momentum: _____ objects tend to remain rotating at the same speed / direction unless acted upon.
5. _____ Velocity: Object changes in speed or direction. This type of velocity is also considered to be acceleration
7. Momentum = Mass times _____
8. Acceleration = The final velocity – the starting velocity, divided by _____
13. Velocity = Speed (distance / time) and d_____.
15. _____ Velocity: Object changes in direction and speed at a particular point in time.
17. Distance = _____ * time (Multiply)
18. Time = Distance _____ by Speed
19. Speed = _____ divided by time
21. A measure of the motion of a body equal to the product of its mass and velocity.
23. _____ = The rate of change in velocity. (m/s²) Thefinal velocity – the starting velocity, divided by time. also... a = (v2 – v1)/(t2 – t1)

Down

1. _____ = To slow velocity.
2. Acceleration = The final velocity – the _____ velocity, divided by time
3. _____ Velocity: Object does not change direction or speed. An object moving at constant velocity would moving in a straight line at a steady speed. An example would be an asteroid or a comet.
6. _____ Force: (Does not exist) The Force that makes you feel that a force is acting outward on a body moving around a center, arising from the body's inertia. Not a real force!
9. Amount of Work (w) done depends on two things: F_____ times Distance
10. _____ Force: Force that acts on a body moving in a circular path and is directed toward the center and around which the body is moving.
11. _____ theorem, the well-known geometric theorem that the sum of the squares on the legs of a right triangle is equal to the square on the hypotenuse (the side opposite the right angle)—or, in familiar algebraic notation, a2 + b2 = c2.
12. Acceleration = The _____ velocity – the starting velocity, divided by time
14. Law C_____ of Momentum: The momentum of an object is the product of its mass and its velocity.
16. _____ Velocity: Objects that fall through the atmosphere. This is caused by changes due to air resistance.
20. A unit of energy, work, or amount of heat. Equal to the energy expended in applying a force of one newton through a distance of one meter.
22. For a collision occurring between two objects (cars) the total momentum of the two objects before the collision is _____ to the total momentum of the two objects after the collision.

----------Teacher can remove this word bank to make puzzle more challenging----------

Possible Answers

ACCELERATION, CENTRIFUGAL , CENTRIPETAL, CHANGING , CONSERVATION, CONSTANT, DECELERATION, DIRECTION, DISTANCE, DIVIDED, EQUAL, FINAL, FORCE, INSTANTANEOUS , JOULE, MOMENTUM, PYTHAGOREAN, ROTATING, SPEED, STARTING, TERMINAL, TIME, VELOCITY

Forces in Motion Lesson 6

Name:

1-20 = 5 pts **Show your work and Units!**
*20-*25 * = Bonus + 1 pt,
(Secretly write owl in correct space +1 pt)
Final Question = 5 pt wager

Score ____ / 100

CENTIPEDE	SPEEDY PETE	HERE WE GO	MOVIN AND GROOVIN	RACE FLIX Bonus round 1 pt each
1) Centrifugal Force "A fictious Force"	6) 1.66 h	11) Velocity "Owl"	16) Acceleration "Vector"	*21) Talladega Nights
2) Centripetal Force	7) 5 m/s	12) Constant Velocity	17) a = 30 m/s / 10 s = 3 m/s² N	*22) Herbie Fully Loaded
3) A is a Scalar B is a Vector	8) 400km/5hr = 80km/hr.	13) Changing Velocity Acceleration	18) Deceleration = -.6 m/s² West	*23) Fast and Furious
4) Distance = 6 km	9) Sprint / Jog Purple Line	14) Terminal Velocity	19) Momentum = 105 kg/m/s North	*24) Days of Thunder
5) 8.33 km/h	10) Pink Line	15) Instantaneous Velocity	20) 5 N * 10 m = 50 Joules	*25) Speed Racer

Final Question: 5 Point Wager ____=WAGER Equal Energy In = Energy Out