leah ♡

Paste this page in your Science Interactive Notebook and use the Speed Formula Triangle to calculate the following:

1. Becky leaves home and rides a distance of 30 km. It took her 2.5 hours. What is her speed? 12km/hr

2. A speed boat is traveling at 100 km/hr. How many hours will it take for the boat to cover a distance of 115 km? 1.15 hrs.

3. What is the speed of a helicopter that traveled 1200 miles in 7 hours? 171.4 mph

4. A hot air balloon traveled 2.5 hours at a speed of 450 km/hr. What distance did it travel? 1125 km

5. An airplane leaves Orlando Fl and travels 540 miles to Washington D.C. The flight takes 90 minutes. What is the speed of the plane? 6ml/min

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1. $\frac{S}{T}$ $\frac{30}{2.5}$ = 12 km/hr

2 $T = \frac{S}{D}$ $T = \frac{100}{115} = .81$ hours $\frac{115}{110}$ $\frac{D}{S}$ = 1.15 hrs.

3. S = D 1200 T = 7 $S = \frac{1200}{7}$ speed 171.4 mph

4. D = S x T 450 x 2.5 1125 km

5. D = S x T 540 = 90 6ml/min

Name Leah _____ Date _____

Quiz: Describing Motion

Matching

b 1. Motion	a. speed that does not vary
d 2. Distance	b. when an object changes position
e 3. Displacement	c. speed at any given point in time
c 4. Instantaneous speed	d. how far an object has moved
a 5. Constant speed	e. distance and direction of an object's change in position

6. To skate 100 meters in 20 seconds, a skater must skate at a speed of 5 m/s.

7. If a runner maintains a constant speed of 12 miles/hour, how long will it take to complete a half marathon race of 13.1 miles? 1.09h

8. If Johnny won a 300 meter race in 40 seconds, his speed would be 7.5 m/sec

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6 $S = \frac{D}{T} = \frac{100 \text{ met}}{20 \text{ sec}} = 5 \text{ m/s}$

7. $T = \frac{\text{Dist}}{\text{Speed}}$ $\frac{13.1 \text{ mi}}{12} = 1.09 \text{ h}$

8. $S = \frac{D}{T}$ $\frac{300}{40} = 7.5 \text{ m/sec}$

Practice Problems: Acceleration

Directions: Complete the table below.

	Final velocity v_f	Initial velocity v_i	$v_f - v_i$ Δv	Time (t)	$a = \frac{\Delta v}{t}$
1	26 m/s	20 m/s	$\Delta v = 6 m/s$	6 s	$a = 1 m/s^2$
2	0 km/s	12 km/s	$\Delta V = -12 km/s$	4 s	$a = -3 km/s^2$
3	8 m/s	3 m/s	$\Delta v = 5 m/s$	2 s	$a = 2.5 m/s^2$
4	46.4 m/s	27.3 m/s	$\Delta V = 19.1 m/s$	11 s	$a = 1.7 m/s^2$
5	5 m/s	15 m/s	$\Delta V = -10 m/s$	5 s	$a = -2 m/s^2$

Complete the following word problems. Show your work.

6. A paperboy rode his bike at 3 m/s. After being chased by a dog for 8 seconds, he was traveling 6m/s. What is his acceleration?

$a = .375 m/s^2$

7. A pumpkin is dropped, and after 5 seconds its velocity is 47 m/s. What is its acceleration?

$\Delta V = 47 m/s^2$ $A = \frac{\Delta V}{T} = \frac{47/s}{5/s} = 47 m/s^2$

6. A soccer player is running at 6 m/s. He then stumbles over an opponent's foot, falls and rolls to a stop. This took 4 seconds. What was his acceleration?

$\Delta V = 6 m/s$ $a = \frac{6 m/s}{4 s} = 1.5/s^2$

7. A skateboarder fell doing a jump. She got up and after 5 seconds returned to a velocity of 5 m/s. What was her acceleration? $\Delta V = 5 m/s$

$a = \frac{\Delta V}{t} = \frac{5 m/s}{5} = 1 m/s^2$