Formula Challenge   Name _____

What do the following units represent? Use D for distance, T for time, S for speed, or A for acceleration.

_____ 1. 14 km   _____ 4. 6 hours   _____ 7. 14 mi   _____ 10. 1.4 m

_____ 2. 30 m/s   _____ 5. 12 cm/s^2 _____ 8. 3.2 sec   _____ 11. 6 cm/min/sec

_____ 3. 34 min   _____ 6. 150 mph   _____ 9. 25 ft   _____ 12. 3 km/hr/sec

Solve each problem! Be sure to show your work!

13.   Goldie Goldfish, a speed swimmer, loves to race around the park's pond, which is 0.5 miles around. If she can swim 20 laps around the track in 2 hours, what is her average <u>speed</u>?

14. It takes Stu, a slimy slug, 20 minutes to travel from his favorite bush to the local trash can (a trip of 30 meters), how <u>far</u> can he travel in 1 hour (60 minutes)?

15. At exactly 2:00 pm, Speedy the Snail crawls onto a meter stick at the 10 cm mark. If he reaches the 65 cm mark at exactly 2:10 pm, what is his <u>speed</u>?

16. If it takes Leaping Louie 5 minutes to jump 3 blocks, <u>how long</u> will it take for him to jump 15 blocks?

17. If Bert the Bat travels eastward at 40 mph with a <u>tail wind</u> of 6 mph, what is his actual <u>speed</u>?

18.   Toon Train is traveling at the speed of 10 m/s at the top of a hill. Five seconds later it reaches the bottom of the hill and is moving at 30 m/s. What is the rate of <u>acceleration</u> of Toon Train?

19. Pete the Penguin loves to sled down his favorite hill. If he hits a speed of 50 m/s after 5 seconds, what is his rate of <u>acceleration</u>? Hint: He starts at 0 m/s at the top of the hill.

20. Monster Mike's truck decelerates from 72 m/s to 0 m/s in 6 seconds. What is his rate of <u>deceleration</u>?

Formula Challenge Answer Key

D 1. 14 km	**T** 4. 6 hours	**D** 7. 14 mi	**D** 10. 1.4 m
S 2. 30 m/s	**A** 5. 12 cm/s^2	**T** 8. 3.2 sec	**A** 11. 6 cm/min/sec
T 3. 34 min	**S** 6. 150 mph	**D** 9. 25 ft	**A** 12. 3 km/hr/sec

Solve each problem! Be sure to show your work!

13. Goldie Goldfish, a speed swimmer, loves to race around the park's pond, which is 0.5 miles around. If she can swim 20 laps around the track in 2 hours, what is her average <u>speed</u>?

20 x 0.5 = 10 miles ÷ 2 hours = 5 mph

14. It takes Stu, a slimy slug, 20 minutes to travel from his favorite bush to the local trash can (a trip of 30 meters), how <u>far</u> can he travel in 1 hour (60 minutes)?

30 ÷ 20 = 1.5 m/min x 60 min = 90 m

15. At exactly 2:00 pm, Speedy the Snail crawls onto a meter stick at the 10 cm mark. If he reaches the 65 cm mark at exactly 2:10 pm, what is his <u>speed</u>?

65 cm - 10 cm = 55 cm ÷ 10 min = 5.5 cm/min

16. If it takes Leaping Louie 5 minutes to jump 3 blocks, <u>how long</u> will it take for him to jump 15 blocks?

3 blocks ÷ 5 min = 0.6 blocks/min   15 blocks ÷ 0.6 blocks/min = 25 min

17. If Bert the Bat travels eastward at 40 mph with a <u>tail wind</u> of 6 mph, what is his actual <u>speed</u>?

40 mph + 6 mph = 46 mph

18.   Toon Train is traveling at the speed of 10 m/s at the top of a hill. Five seconds later it reaches the bottom of the hill and is moving at 30 m/s. What is the rate of <u>acceleration</u> of Toon Train?

30 m/s - 10 m/s = 20 m/s ÷ 5 s = 4 m/s^2

19. Pete the Penguin loves to sled down his favorite hill. If he hits a speed of 50 m/s after 5 seconds, what is his rate of <u>acceleration</u>? Hint: He starts at 0 m/s at the top of the hill.

50 m/s - 0 m/s = 50 m/s ÷ 5 s = 10 m/s^2

20. Monster Mike's truck decelerates from 72 m/s to 0 m/s in 6 seconds. What is his rate of <u>deceleration</u>?

0 m/s - 72 m/s = - 72 m/s ÷ 6 s = -12 m/s^2