**Practice for 2.3**

**On a separate sheet of paper, show your work. List your knowns (suvat), show which formula you are going to use, and show the knowns in that formula.**

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|  | **Regular one step or two step problems:** |
| 11.2 m | 1. A Pirate Ship accelerates uniformly from 1.80 m/s to 5.60 m/s with an acceleration of 1.25 m/s/s. What was its displacement? |
| 8.28 m/s | 2. A lemur going 3.45 m/s accelerates at 1.52 m/s/s for 3.18 s. What is its final velocity? |
| -8.85 m/s/s | 3. A giant lizard stops in 5.85 m in 1.15 s. What was its acceleration? |
| 12.4 s | 4. A tuna going 2.35 m/s accelerates at 0.208 m/s/s covering a distance of 45.0 m. What time did it take? |
| 7.27 m | 5. A lemming speeds up from rest to 5.19 m/s in 2.80 s. What is its displacement during this time? |
| 21.6 m/s | 6. An accident scene detective knows that a car with a deceleration of -7.14 m/s/s was brought to rest in 32.8 m. What was the initial velocity? |
| -1.22 m/s/s | 7. What is the acceleration of an ATV that goes from 12.0 m/s to 7.50 m/s in 3.68 s? |
| 41.9 m | 8. A XC runner accelerates uniformly for 8.20 s at 0.540 m/s/s having a final velocity of 7.32 m/s. What is their displacement during this time? |
| 22.8 m/s | 9. A racecar accelerates at 5.13 m/s/s for 3.35 s covering a distance of 105 m. What was its initial velocity? |
| 21.9 m/s | 10. A car avoiding an accident is brought to rest over a distance of 56.0 m in 5.12 s. What was its initial velocity? |
| -4690 m/s/s | 11. A baseball going 38.0 m/s decelerates to rest over a distance of 0.154 m. What was its deceleration? (It's big) |
| -2.01 m/s/s | 12. A car goes from 27.2 m/s to 14.7 m/s in 6.23 s. What is its acceleration? |
| 458 m | 13. A train going 45.0 m/s decelerates at -2.17 m/s/s for 17.9 s. What is its displacement during this time? |
| 4.36 m/s | 14. A hamster going 2.7 m/s accelerates uniformly for 6.52 s, covering a distance of 23.0 m. What was its final velocity? (it's riding a hamster scooter) |
| 2.33 s | 15. A car is going 15.0 m/s after having decelerated at -6.25 m/s/s over a distance of 52.0 m. What time did it take? |
| -25.1 m/s | 16. A hot pocket accelerating at -9.81 m/s/s from rest falls downward -32.1 m. What is the final velocity? |
| 18.2 m/s | 17. A car accelerates uniformly for 8.70 s with a final velocity of 31.5 m/s over a distance of 216 m. What was its initial velocity? |
| 2.39 s | 18. A car that can brake at -8.92 m/s/s will take what time to decelerate from 33.1 m/s to 11.8 m/s? |
| 81.6 m | 19. A rollercoaster car going 8.60 m/s decelerates at -0.215 m/s/s for 11.0 s. What was its displacement during this time? |
| 47.1 s | 20. A space probe is going 615 m/s after having decelerated at -0.147 m/s/s over a distance of 29,100 m. What time did it take? |
|  | **Two-part kinematics problems:** |
| 39.2 m | 21. A dragon boat accelerates from 1.13 m/s to 3.60 m/s in 4.13 seconds. Over what distance could it accelerate from rest to 6.85 m/s if it had the same acceleration? |
| 4.98 s | 22. A car accelerates uniformly from rest, covering 65.0 m in 5.62 seconds. What time would it take the same car to go from 8.90 m/s to 29.4 m/s if it had the same acceleration? |
| 7.73 m/s | 23. A runner covers 21.5 m accelerating uniformly from rest to 9.94 m/s. What was their speed when they had covered only 13.0 m? |
| 2.84 s | 24. A train decelerates from 35.0 m/s to 22.0 m/s in 42.0 seconds. What time did it take it to cover 98.0 meters from the beginning? |
| 17.5 s | 25. A car accelerates from rest to 23.0 m/s over a distance of 231 m. What time would it take it to accelerate from rest to 20.0 m/s if it accelerated at the same rate? |