Acceleration practice test Name:

Remember… the drawings are worth almost as much as the math!!!

1. A skydiver jumps out of a plane and reaches a terminal velocity of 55 towards the ground. 25 s after he jumps, he opens a parachute. 32s after he jumps, he has slowed to a velocity of 20 towards the ground. What is the decelerating force?
2. During a science experiment, a stick is being timed floating down a river. When the stopwatch reads 2.1 s, the stick is travelling down the river at 4.2 . A sudden tide accelerates the stick uniformly till it is travelling up the river at 1.3 when the stopwatch reads 4.3 s. What is the acceleration the stick undergoes?
3. A NASCAR driver travelling west on a straightaway steps on the gas 42 s after the race has started, accelerating at a constant rate of 15 to the west. 45 s after the race started, the car is travelling at 67 west. What was the velocity of the car before the driver stepped on the gas?
4. The rock falls from the top of a building at 12pm. What is his velocity 5 s after 12?
5. A falling ball crosses the top of a window travelling at 10.4 . At 12:30.12, the ball is falling at 30 downwards. What time did the ball cross the top of the window?
6. A slingshot shoots a beanbag directly upwards with an initial velocity of 42 upwards. How long does it take for the beanbag to reach its maximum height?

Calculating the braking power of a car.

Use the following data to calculate the deceleration of a car

|  |
| --- |
| Time (s) Velocity (m/s) W |
| 1 17 |
| 2 13.5 |
| 3 11.5 |
| 4 8.5 |
| 5 5 |
| 6 2.5 |

Marks:

1. Descriptive title (1)
2. Properly labeled axis with units (1)
3. Legend (1)
4. Properly plotted points (1)
5. Line of best fit (1)
6. Slope calculation (acceleration) ON GRAPH (3)