

The graph on the left shows the relationship between the length of a harvest and the number of aces left to harvest.

1. Describe the relationship between the area remaining and the number of days.
2. Estimate the area remaining after 3 days.
3. By how much does the area decrease after each day of harvest?
4. What are suitable units for the rate of change of this situation?
5. What is the rate of the change of this situation?
6. Create an equation to model this situation.
7. Use your equation to determine the number of days required to complete the harvest.

8. Draw a line of best fit for the data on the left.
9. Determine the equation of your line of best fit.
10. Make up a real world scenario to match the data.

As a scuba diver descends below the water's surface, the pressure exerted on the diver increases. At the surface, the pressure is 1 atmosphere or 101.33 kilopascals ( kPa ). For each 5 m that the diver descends, the pressure increases by 49.03 kPa .

1. Complete the table of values below and verify a linear relationship.

| Depth (m) | Pressure (kPa) |
| :---: | :---: |
| 0 |  |
| 5 |  |
| 10 |  |
| 15 |  |
| 20 |  |
| 25 |  |

2. Create an equation to model this situation.
3. If the pressure exceeds 1200 kPa , the oxygen component in the compressed air that the diver is breathing becomes toxic. Use your equation to determine the depth at which this occurs.
