Vehicles tend to lose their value as they get older due to wear and tear, overuse, and weathering.

You buy a new car for $20,000 and it depreciates (loses value) by about 12% per year.

What is the percent change in value each year?

What is that percent as expressed as a decimal?

How much is it worth after one year?

How much is it worth after 3 years?

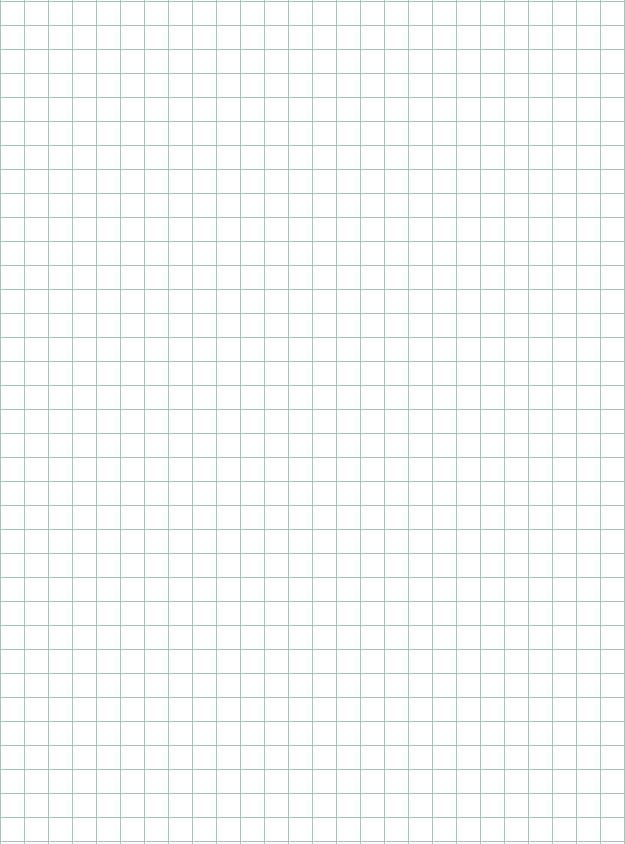


TABLE OF VALUES

|  |  |
| --- | --- |
| X (years since purchase) | Y(value after x years) |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |

TABLE OF VALUES USING ONLY THE NUMBERS $20,000 and 0.88

|  |  |
| --- | --- |
| X (years since purchase) | Y(value after x years) |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| … | … |
| x |  |

How much will it be worth after 20 years?

Estimate from the table:

Actual calculation:

When will it be worth $5,000

Estimate from the table:

Actual solving:

What is the asymptote of this pattern? (What is an asymptote, by the way????)