**Exponential Relationships**

Determine if each relationship is linear, quadratic, exponential or neither.

|  |  |
| --- | --- |
| x | y |
| 3 | 22 |
| 5 | 19 |
| 7 | 16 |
| 9 | 13 |
| 11 | 10 |

|  |  |
| --- | --- |
| x | y |
| 8 | 3 |
| 5 | 5 |
| 2 | 9 |
| -1 | 17 |
| -4 | 33 |

|  |  |
| --- | --- |
| x | y |
| -5 | 2 |
| -3 | 3 |
| -1 | 6 |
| 1 | 11 |
| 3 | 18 |

a) b) c)

**Solving Simple Exponential Equations**

Use a variety of techniques to solve the following equations.

a) b) c)

d) e) f)

**Logarithms (Extension)**

The log(x) determines the exponent that needs to be put on a base of ‘10’ to make it equal to x.

**Example 1**

Evaluate each logarithm.

a) b)

c) d)

There are three rules that can be applied to logarithms:

Product Rule:

Quotient Rule:

Power Rule:

**Example 2**

Solve the following exponential equations using logarithms.

a) b) c)