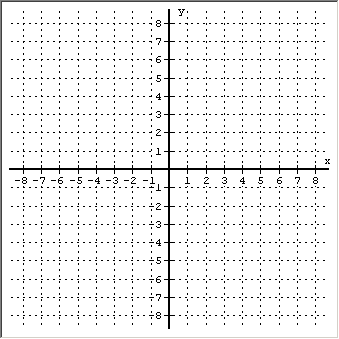
# Graphical Analysis of Logarithmic Functions

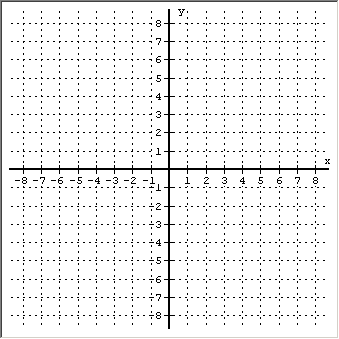
****Name:

### Consider the equation: Graph: *y* log3x

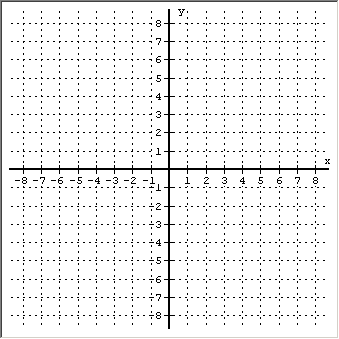
1. Function? yes/no
2. One-to-One Function? yes/no
3. State any Symmetry:
4. Domain using interval notation:
5. Range using interval notation:
6. *x*-intercept(s):
7. *y*-intercept:
8. Are there any Asymptotes? If yes, then give the equation(s)
9. Where is *f* (*x*) 0 ? State the x-values using interval notation
10. Where is *f* (*x*) 0 ? State the x-values using interval notation
11. Where is *f* (*x*) 0 ? List the x-value(s)
12. Where is *f* (*x*) increasing? State the x-values using interval notation
13. Where is *f* (*x*) decreasing? State the x-values using interval notation
14. Where is *f* (*x*) concave up? State the x-values using interval notation
15. Where is *f* (*x*) concave down? State the x-values using interval notation

### Consider the equation: Graph

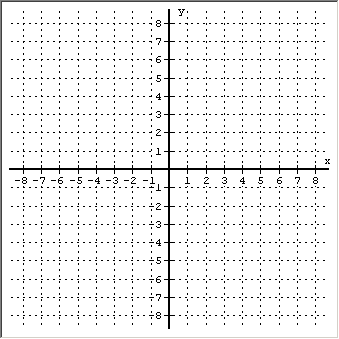
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 **3. Graph function  . Label two points.**

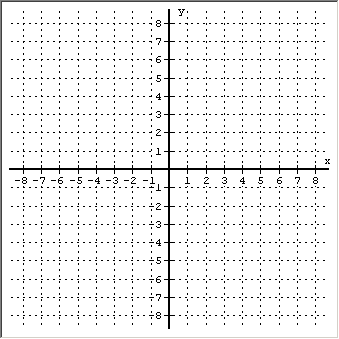
1. Domain:
2. Range:
3. Describe the transformation:
4. Equation of Asymptote

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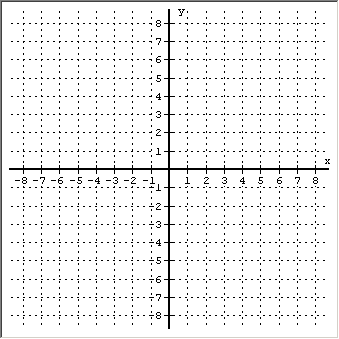
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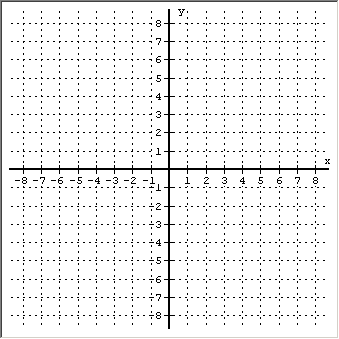
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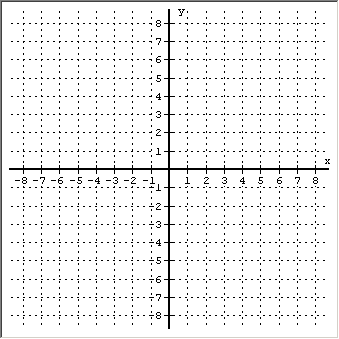
1. Domain:
2. Range:
3. Describe the transformation:
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**7. Graph function  . Label two points.**

1. Domain:
2. Range:
3. Describe the transformation:
4. Equation of Asymptote

**8. Graph function  . Label two points.**

1. Domain:
2. Range:
3. Describe the transformation:
4. Equation of Asymptote

**9. Graph function  . Label two points.**

1. Domain:
2. Range:
3. Describe the transformation:
4. Equation of Asymptote