Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Formative Solving Logarithmic Equations Period\_\_\_\_\_

1. ALGEBRAICALLY determine the solutions to the given logarithmic equations
2. CONFIRM answers using a graphing calculator
3. Complete the related table

|  |  |
| --- | --- |
| Related GraphShape  Description automatically generated | Related Equation$$8log\_{10}(x-5)+2= 10$$ |

Did you have any extraneous solutions? \_\_\_\_\_\_\_ If so what was it?\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Related Functions$$f\left(x\right)=8log\_{10}\left(x-5\right)+2$$$$g\left(x\right)=10$$ | State the coordinate AExactApproximate  | State the coordinate BExactApproximate  | State the coordinate CExactApproximate  | State the Domain of the Logarithmic FunctionState the vertical asymptote |

Solve each of the following logarithmic equations

|  |  |
| --- | --- |
| $$log\_{8}\left(x-10\right)+log\_{8}\left(x+10\right)=2$$Did you have any extraneous solutions? \_\_\_\_\_\_\_ If so what was it?\_\_\_\_\_\_\_\_\_ | $$log\_{6}\left(x-1\right)+log\_{6}\left(x+9\right)=log\_{6}\left(11\right)$$Did you have any extraneous solutions? \_\_\_\_\_\_\_ If so what was it?\_\_\_\_\_\_\_\_\_ |

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1. ALGEBRAICALLY determine the solutions to the given logarithmic equations
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|  |  |
| --- | --- |
| Related Graph | Related Equation$$5log\_{10}(x+3)+4= 14$$ |

Did you have any extraneous solutions? \_\_\_\_\_\_\_ If so what was it?\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Related Functions$$f\left(x\right)=5log\_{10}(x+3)+4$$$$g\left(x\right)=10$$State the Domain of the Logarithmic FunctionState the vertical asymptote | State the coordinate AExactApproximate  | State the coordinate BExactApproximate  | State the coordinate CExactApproximate  | State the coordinate DExactApproximate  |

Solve each of the following logarithmic equations

|  |  |
| --- | --- |
| $$log\_{4}\left(x-10\right)+log\_{4}\left(x+10\right)=3$$Did you have any extraneous solutions? \_\_\_\_\_\_\_ If so what was it?\_\_\_\_\_\_\_\_\_ | $$log\_{6}\left(x-1\right)+log\_{6}\left(x+10\right)=log\_{6}\left(12\right)$$Did you have any extraneous solutions? \_\_\_\_\_\_\_ If so what was it?\_\_\_\_\_\_\_\_\_ |