Make sure to show all work if you want credit.

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| **Evaluate the given log using the change of base formula** |
| 1. $log\_{4}(14)$
 | 1. $log\_{3}(5)$
 | 1. $log\_{2}(19)$
 |
| **Expanded form using the properties of logarithms.** |
| 1. $log\_{5}(2x)$
 | 1. $log\_{6}\left(\frac{x}{5}\right)$
 | 1. $log\_{7}\left(\frac{2x}{5}\right)$
 |
| **Condense the logarithmic expression till you have a single logarithm.** |
| 1. $log\_{8}\left(5\right)+log\_{8}\left(x\right)$
 | 1. $log\_{9}\left(5\right)-log\_{9}\left(x\right)$
 | 1. $log\left(3\right)+log\left(y\right)-log⁡(5)$
 |
| **Solve for x.** |
| 1. $log\_{2}\left(10x\right)=log\_{2}\left(3x+28\right)$
 | 1. $log\_{2}\left(x+5\right)=4$
 | 1. $log\_{2}(x)+log\_{2}\left(x+3\right)=2$
 |
| 1. $6^{3x-2}=11$
 | 1. $4^{x}=8^{2}$
 | 1. $25^{x}=125^{x-2}$
 |
| **Answer the following application problems.** |
| 1. Ricardo invests $8650 in an account that earns 3.9% interest compounded continuously. What is the total amount of his investment after 9 years?

Identify the following:*P= t=**n=**r= P(t)=* | 1. Suppose that $590 is deposited into an account that pays 3.5% compounded quarterly. How long will it will take for the account to contain at least $800?

Identify the following:*P= t=* *n=**r= P(t)=* | 1. If you deposit $4000 into an account paying 9% annual interest compounded monthly, how long until there is $10,000 in the account?

Identify the following:*P= t=* *n=**r= P(t)=* |
| 1. If you deposit $5000 into an account paying 8.25% annual interest compounded semiannually, how long until there is $9350 in the account. Use the following formula to find the length of time.

$$5000\left(1+\frac{8.25\%}{2}\right)^{2t}=9350$$ | 1. Mrs. Peters deposited $6000 into an account paying 6.5% annual interest compounded quarterly, how long would it take the money to grow to $12600?

$$6000\left(1+\frac{6.5\%}{4}\right)^{4t}=12600$$ | 1. Mr. Malt took $4500 of savings to invest in the Dallas Pounce Co-op. The Co-op said that they would pay him back in 10 years. The guaranteed a 5% interest compounded monthly. How much will Mr. Malt have at the end of that period of time?
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