

Name: \_\_\_\_\_

Show work needed to justify your answer.

Date: \_\_\_\_\_

HW: # 39f: Math IBSL - Standard 38 - Logarithms

5 points

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1 Solve each equation:

a  $2^x = 5$     b  $3^x = 17$     c  $9^x = 49$

d  $2^{x+1} = 15$     e  $6^{x-2} = 4$     f  $e^{x-1} - 4 = 6$

3 Solve each equation:

a  $6 \times 2^x = 14$     b  $4 \times 6^{3x} = 16$

c  $3 \times 4e^{2-2x} + 1 = 4$     d  $10 - 2e^{7x+5} = 3$

5 Solve each equation:

a  $e^{2x} - 5e^x + 4 = 0$     b  $e^{2x} - 2e^x - 3 = 0$

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- 7 Mo bought a new car from a showroom.  
The value,  $\$P$ , of Mo's car is modelled by  
 $P(t) = 20\,000(0.9)^{kt} + 1000$ , where  $t$  is the  
number of years since Mo bought the car.
- a Find the price that Mo paid for the car.

After three years, the car was valued at  
\$16 000.

- b Find  $k$ .

Mo will sell his car when it is worth \$5000.

- c Determine the number of years, after  
buying the car, that Mo sells it.
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