**UNIT REVIEW**

1. Simplify each expression (expression each as a power with positive exponents).
2.  b)  c)  d) 
3. Write as a root (in radical form), then evaluate [4 marks]
4.  b) 
5. Solve for *x*.

|  |  |  |
| --- | --- | --- |
| 1.
 | 1.
 | c)  |
| 1. $27^{2}=3^{2x+1}$
 | e)  |

|  |  |
| --- | --- |
| 1. The formula can be used to model the growth of money when interest is compounded monthly. Solve for i.
 | 1. The volume of a sphere is given by the formula $V=\frac{4}{3}πr^{3}$. Solve for r.
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1. The formula  related the mass of an object (m), the speed of light (c) and energy (E).
* Solve for m.
* Solve for c.
1. Solve for x to two decimal places using a table of values to guess and check

 $4^{x}=300$

1. Cynthia deposits money in a high interest savings account. The value of the account, V dollars, after t years is given by the equation:

$$V=2000\left(1.04\right)^{t}$$

* 1. What does 2000 represent?
	2. What does 1.04 represent?
	3. How much money is the account after 13 years?
	4. Cynthia will buy a used car when she has saved $5000. After how many years will Cynthia buy her car?
1. Tritium, a radioactive gas that builds up in CANDU nuclear reactors, is collected, stored in pressurized gas cylinders, and sold to research laboratories. Tritium decays into helium over time. Its half-life is about 12.3 years.
	1. Write an equation that gives the mass of tritium remaining in a cylinder that originally contained 500 g of tritium.
	2. Estimate the time it takes until less than 5 g of tritium is present.
2. A colony of bacteria doubles in size every 20 min. How long will it take for a colony of 20 bacteria to grow to a population of 10000?

**PRACTICE**:

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