**How Fast Can Bacteria Reproduce?**

1. If you start with 10 bacteria and they reproduce **every 20 minutes**, how many will you have in an hour? (show work) \_\_\_\_\_\_\_\_\_\_\_\_\_\_**bacteria**
2. If you have 8 bacteria and they reproduce **every hour**, how many hours have gone by when you have 64 bacteria? (show work) \_\_\_\_\_\_\_**hrs.**
3. If you have 12 bacteria and they reproduce every **half-hour**, how many bacteria will you have in 3 hours? (show work) \_\_\_\_\_\_\_\_\_\_\_ **bacteria**
4. If you have 4 bacteria and they divide and split every **½ hour**, how many hours will it take to get to 1,024 bacteria? (show work) \_\_\_\_\_\_\_\_\_**hrs.**
5. If you have 10 bacteria and they reproduce **every 20 minutes**, how much time does it take to get over 10,000 bacteria? \_\_\_\_\_\_\_\_\_\_**hrs.**

**Challenge Problems:**

1. You start out with 200 staph bacteria on your skinned knee that divide and split every 20 minutes. After 3 hours you worry about an infection so you wash your wound with anti-bacterial soap which kills 90% of this staph infection. How many staph bacteria do you have left?
2. The remaining staph bacteria now reproduce every 30 minutes, but after 3 hours, your soap only kills 50 percent of these bacteria. How much bacteria do you have now?