

Before we begin, are there any questions from last day's work?

pp.352-353 #1(a,c),2(i,iii),3(a,b,c),4(a,b),5(a,b,c),**Blue**](a,b,d),9(b,c)

"Show What You Know: 1.3" is first...

Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) review all ideas for the unit summative.

Today's work

pp. 393-394 #1, 3-6, 7b, 8, 10(a,b)

Challenge Problem #15

**Please submit the homework sheet 1.8.2 and p.344 #9,
using the link in our Google Classroom.**

- A** 1. Suppose you invest \$200 at 6% compounded annually. How many years would it take for your investment to grow to each amount?
- a) \$300 b) \$400 c) \$600

$$A = P(1+i)^n$$

$$A = 600$$

$$600 = 200(1+0.06)^x$$

$$P = 200$$

$$\frac{600}{200} = 1.06^x$$

$$i = \frac{0.06}{1}$$

$$3 = 1.06^x$$

$$n = 1x$$

$$\log 3 = x \log 1.06$$

$$\frac{\log 3}{\log 1.06} = x$$

$$x = 18.85$$

5. Calculate the number of years for an investment of \$1000 to double at an interest rate of 7.2% for each compounding period.

a) annually

b) semi-annually

c) monthly

d) daily

$$A = 2000$$

$$P = 1000$$

$$i = \frac{0.072}{2}$$

$$h = 2x$$

$$A = P(1+i)^n$$

$$2000 = 1000 \left(1 + \frac{0.072}{2}\right)^{2x}$$

$$2 = \left(1 + \frac{0.072}{2}\right)^{2x}$$

$$\frac{\log 2}{\log(1.036)} = 2x$$

$$\frac{\log 2}{2 \log(1.036)} = x$$

$$x = 9.79$$

→ $x = 10$ years.

8. For every metre below the surface of water, the intensity of three colours of light is reduced as shown.

a) For each colour, write an equation to express the percent, P , of surface light as a function of the depth, d metres.

b) For each colour, determine the depth at which about one-half the light has disappeared.

c) Write each equation in part a as an exponential function with base 2.

d) For all practical purposes, the light has disappeared when the intensity is only 1% of that at the surface. At what depth would this occur for each colour?

| Colour | Percent reduction (per metre) |
|--------|-------------------------------|
| Red | 35% |
| Green | 5% |
| Blue | 2.5% |

9. Polonium-210 is a radioactive element with a half-life of 20 weeks. From a sample of 25 g, how much would remain after each time?
- a) 30 weeks b) 14 weeks c) 1 year d) 511 days

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Today's work

pp. 393-394 #1, 3-6, 7b, 8, 10(a,b)

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