1) $a_n = 7, -1, -9 \cdots$

Is a_n an arithmetic or geometric sequence?

How many terms are in the sequence:

Explicit Formula:

Find a_{12} :

What is the sum of the first 5 terms of the sequence a_n ?

2) $b_n = 4, \frac{-2}{3}, \cdots \frac{1}{11664}$

Is b_n an arithmetic or geometric sequence?

How many terms are in the sequence:

Explicit Formula:

Find b_8 :

What is the sum of the first 8 terms of the sequence b_n

3) Rewrite the following series using sigma notation.

a)
$$4 + 24 + 144 + \dots + 186,624$$

b)
$$360 + 180 + 90 + \dots + 5.625$$

c)
$$-6 + 24 + -96 + \cdots + -393216$$

4) Determine the sum of each finite geometric series.

$$\sum_{n=1}^{6} 2(3)^n$$

$$\sum_{n=4}^{7} 5(2)^{n-1}$$

$$7+1+\frac{1}{7}+\cdots+\frac{1}{2401}$$

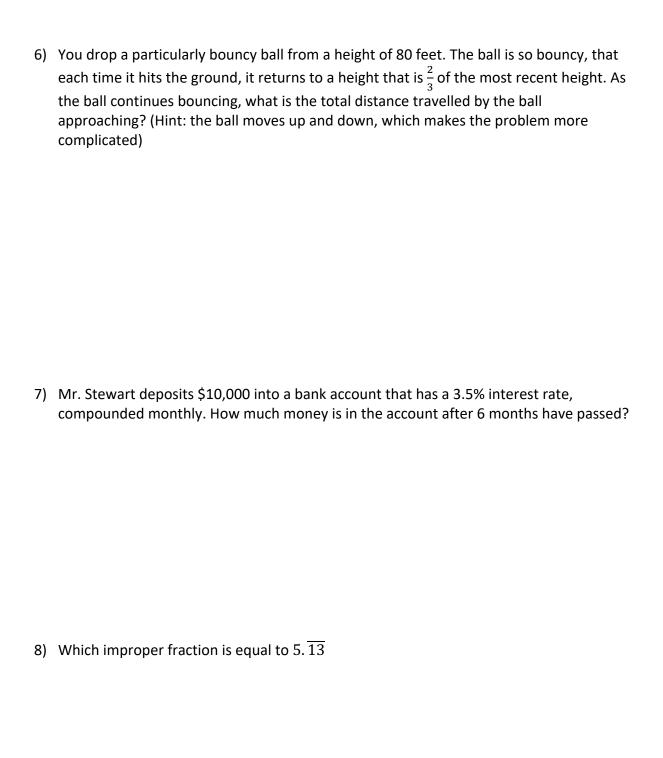
5) Determine if the series converges or diverges. If it converges find the sum.

$$\sum_{n=1}^{\infty} 2\left(-\frac{5}{3}\right)^n$$

$$\sum_{n=1}^{\infty} 3\left(-\frac{1}{2}\right)^n$$

$$2+3+\frac{9}{2}+\cdots$$

$$40 + 16 + \frac{32}{5}$$
...



9) Satellites observe that there are 750 million hectares of rain forest on the planet. The average deforestation rate is 0.68%. Which expression is equal to the number of hectares, in millions, of rain forest remaining after 5 years have passed?

A $750(0.0068)^5$

B $750(0.0068)^4$

 $C 750(0.9932)^5$

D 750(0.9932)⁴

10) A small squirrel near the top of the mountainside is relaxing inside its home with acorns during the harsh winter months. The squirrel carelessly spits an acorn with volume $1\ in^3$ from its mouth and the acorn lands in the soft powdered snow. The momentum of the fall causes the acorn to roll through the snow while the saliva causes the powdered snow to adhere to the acorn forming a snowball. For every second the acorn rolls, the volume of the snowball doubles! The snowball rolls for 10 seconds before colliding with a tree and stopping. How large is the snowball when it impacts the tree?