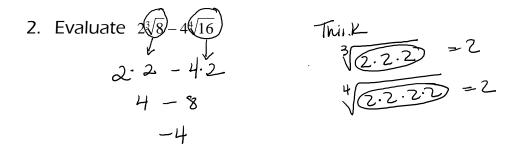
1. In a geometric sequence, 
$$t_1 = 10$$
 and  $t_2 = -25$ , what is  $t_{8?}$ ?  
 $t_n = \alpha r^{n-1}$ 
 $t_8 = 10 \left(-\frac{5}{2}\right)^{8-1}$ 
 $r = t_n - \frac{-25}{10} = -\frac{5}{2}$ 
 $t_8 = 10 \left(-\frac{5}{2}\right)^7$ 
 $t_{8-1}$ 
 $t_8 = 10 \left(-\frac{5}{2}\right)^7$ 
 $t_8 = -6103.515625$ 



3. Solve 
$$\sqrt{2x+7} - x = -4$$
. What are the restrictions on x?  
 $(2x+7)^{2} = (x-4)^{2}$   
 $(2x+7)^{2} = (x-4)^{2}$   
 $(2x+7)^{2} = (x-4)^{2}$   
 $2x = x^{2} - 8x + 16$   
 $x^{3} - 7/2$   
 $0 = x^{2} - 10x + 9$   
 $0 = (x - 9)(x - 1)$   
 $Check : X = 9 and X = 1$ 

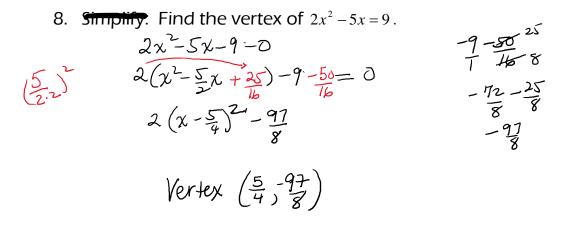
4. Solve: 
$$3x^2 - 11x - 4 = 0$$
  
 $(3x + 1)(x - 4) = 0$  or quadratic formula  
 $3x + 1 = 0$   $\chi = 4$   
 $3\chi = -1$   
 $\chi = -\frac{1}{3}$ 

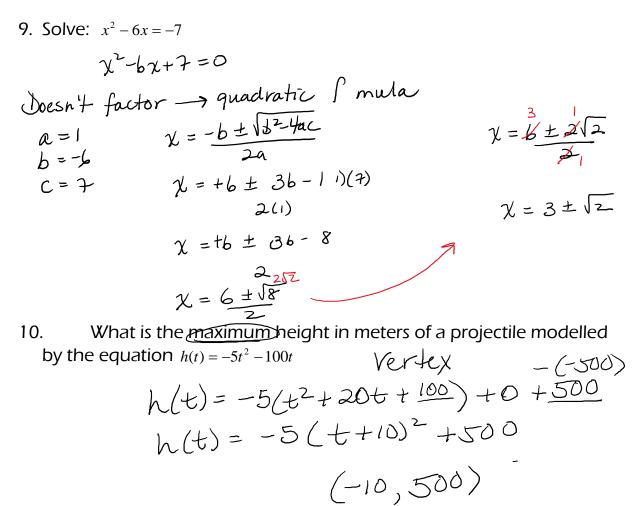
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5. Define 
$$|x|$$
 the absolute value of  $x$ . Visually  
is means the distance between a number and  
2ero. It is also  $\sqrt{x^2}$ . This means you will  
always end up with (output) a positive number  
 $So |x| = x$  if  $x \ge 0$   
 $|x| = -x$  if  $x \ge 0$ 

6. Determine 
$$s_{\infty}$$
 for  $\frac{3}{2} - \frac{1}{2} + \frac{1}{6}$ ...  
Note: when  $|r| \leq |$ , there is a sum of the infinite  
geometric series  
 $r = \frac{1}{2} \div \frac{3}{2} = -\frac{2}{6} = \frac{3}{3}$   
 $\frac{1}{6} \div -\frac{1}{2} = -\frac{2}{6} = \frac{3}{3}$   
 $= \frac{3}{2} \div (\frac{1}{3}) = \frac{3}{2} \div (\frac{4}{3})$   
 $= \frac{9}{8}$   
7. Rationalize and reduce:  $\frac{2\sqrt{8} - \sqrt{5}}{6} \cdot \frac{1 - \sqrt{3}}{6}$  Conjugate!

7. Rationalize and reduce: 
$$\frac{2\sqrt{8}-\sqrt{5}}{1+\sqrt{3}} \cdot \frac{1-\sqrt{3}}{1-\sqrt{3}}$$
 Conjugate:  
 $2\sqrt{8}-2\sqrt{5}+\sqrt{15}$   
 $1-\sqrt{9}$   
 $4\sqrt{2}-4\sqrt{6}-\sqrt{5}+\sqrt{15}$   
 $-2$   
 $-\frac{4\sqrt{2}+4\sqrt{6}+\sqrt{5}-\sqrt{15}}{2}$ 





maximum height is 500 m

Answers can be found in your One Note Notebook.