

# Want to Rent a Movie?

You and your friend each purchased identical subscriptions to an online video rental site.

When you joined, you each paid the one-time membership processing fee. You also paid a flat rate for each movie that you downloaded. By the end of the first month, you had downloaded 8 movies and paid \$16.50, while your friend had downloaded only 6 movies and paid \$14.00.

$y = \text{total cost}$   
 $m = \text{\$ per movie}$   
 $x = \text{\# of movies}$   
 $y = mx + b$   
 $b = \text{membership fee}$

Write and solve a system of linear equations to answer the questions below. Document your work to support your answer.

$(m, b)$   $(1.25, 6.5)$   
 Pt of intersect

$$\begin{cases} 16.50 = 1m(8) + b \\ 14.00 = 6m + b \end{cases}$$

$$\begin{aligned} b &= 16.50 - 8m \\ b &= 14.00 - 6m \end{aligned}$$

1. What was the one-time membership processing fee? \$6.50

2. What was the per-movie rental fee? \$1.25

on graph calc  
 2: trace  
 5: intersect  
 Enter (5X)