6. [11 points] A video is posted online and later goes viral after it is shared by a certain celebrity on a social media platform. 2 hours after it is shared, it has 5 thousand views, and 6 hours after it is shared, it has 10 thousand views.

    a. [2 points] Suppose that the number of views increases at a constant rate of views per hour. Find a formula for $f(t)$, the number of views, in thousands, that the video has t hours after it is shared.

<div align="center">

Answer: $f(t) = $ _____

</div>

    b. [4 points] Suppose instead that the number of views increases at a constant **percent** growth rate, find a formula for $g(t)$, the number of views, in thousands, that the video has t hours after it is shared.

<div align="center">

Answer: $g(t) = $ _____

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    c. [2 points] Suppose that the number of views increases at a constant percent growth rate and M is a number greater than 4. Which of the following numbers is **greater**?

       • Let A be the time, in hours, it takes for the number of views to increase from 4 thousand to 12 thousand.

       • Let B be the time, in hours, it takes for the number of views to increase from M thousand to $3M$ thousand.

    Answer *(Circle one)*:

        A is greater B is greater   They are equal   Cannot be determined

    d. [3 points] Another video has gone viral, and the number of views for that video increases by 40% in 2 hours. Find the **continuous** hourly percent growth rate of the number of views of this video. Give your answer in exact form or correct to at least two decimal places.

<div align="center">

Answer: Continuous hourly percent growth rate: _____%

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