

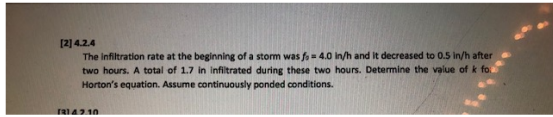
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**Question: [21 4.2.4 The infiltration rate at the beginning of a storm was fo ...**

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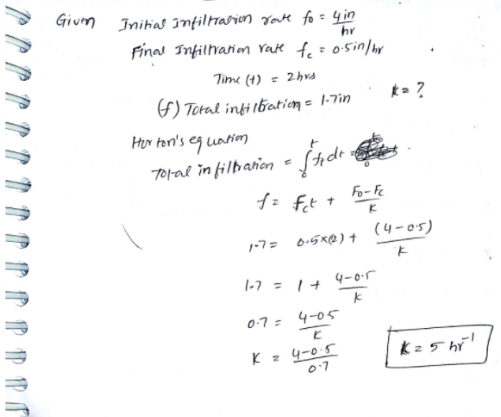
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<p><b>HOMEWORK ITEM NO.1 A.</b> B. C. D.</p> <p><small>Prove that the parameters for Horton's equation are: <math>f_0 = 5.0 \text{ in/h}</math>, <math>f_c = 0.5 \text{ in/h}</math>, and <math>k = 4 \text{ hr}^{-1}</math>. Determine the infiltration rate and cumulative infiltration after 0.5, 1.0, 1.5, and 2.0 hours for the given conditions. Plot the infiltration rate as a function of cumulative infiltration. Assume continuously ponded conditions.</small></p> <p><small>Parameters in Philip's equation for a clay soil are <math>S = 0.45 \text{ cm}^3/\text{h}^2</math> and <math>K = 10 \text{ cm/h}</math>. Determine the cumulative infiltration and the infiltration rate at 0.5-hour increments for a 3-hour period. Plot both as functions of time. Plot the infiltration rate as a function of the cumulative infiltration. Assume continuously ponded conditions.</small></p> <p><a href="#">See answer</a></p>	<p>3. A pipe carrying steam at 4 MPa has an outside diameter of 500 mm and a wall thickness of 15 mm. A gask...</p> <p><small>3. A pipe carrying steam at 4 MPa has an outside diameter of 500 mm and a wall thickness of 15 mm. A gasket is installed between the flange at one end of the pipe and the pipe end at the other end.</small></p> <p><small>(a) How many 50 mm-diameter bolts must be used to hold the cap on if the ultimate stress in the bolts is 100 MPa, or which 60 MPa in the normal stress?</small></p> <p><small>(b) What conventional stress is developed in the gasket?</small></p> <p><small>(c) Why is it necessary to tighten the bolt initially, and what will happen if the steam pressure should cause the stress in the bolts to be twice the value of the initial stress?</small></p> <p><a href="#">See answer</a></p>	<p>See more questions for subjects you study</p>
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Q: [31 4.2.10 Parameters in Philip's equation for a clay soil are  $S = 45 \text{ cm}^3/\text{h}^2$  and  $K = 10 \text{ cm/h}$ . Determine the cumulative infiltration and the infiltration rate at 0.5-hour increments for a 3-hour period. Plot both as functions of time. Plot the infiltration rate as a function of the cumulative infiltration. Assume continuously ponded conditions.

A: [See answer](#) 👍 100% (3 ratings)

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Q: The infiltration rate at the beginning of a storm was  $f_0 = 4 \text{ cm/hr}$  and it decreased to  $0.5 \text{ cm/hr}$  after two hours. A total of  $1.7 \text{ cm}$  infiltrated during these two hours. Determine the value of  $k$  for Horton's equation. Assume continuously ponded conditions.

A: [See answer](#)

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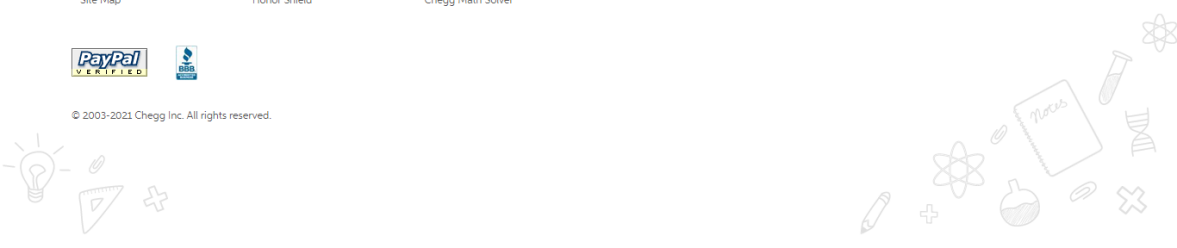
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Question: Use the data to estimate parameters for hortons equation and p...

Use the data to estimate parameters for hortons equation and philps equation

The infiltration rate as a function of time for an Alexis silt loam is as follows (Terstriep and Stall, 1974):

Time (h)	0	0.07	0.16	0.27	0.43	0.67	1.10	2.53
Infiltration rate (in/h)	0.26	0.21	0.17	0.13	0.09	0.05	0.03	0.01

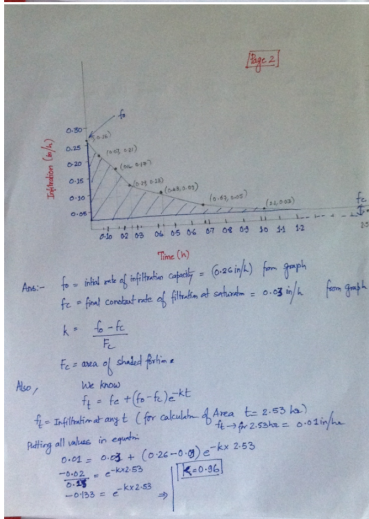
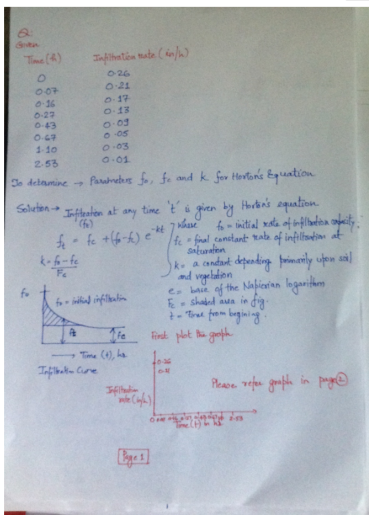
Determine the best values for the parameters  $f_0$ ,  $f_c$ , and  $k$  for Horton's equation to describe the infiltration for Alexis silt loam.

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Expert Answer

Anonymous answered this 4 answers

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Up next for you in Civil Engineering

The rigid bar ABC is originally in a horizontal position. If loads cause the end A to be displaced downwards DA = ...

[Solution image](#)

[See answer](#)

3. A pipe carrying steam at 4 MPa has an outside diameter of 500 mm and a wall thickness of 15 mm. A gask...

[See answer](#)

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- Q: VL Infiltration [1596] VI. The infiltration rate as a function of time for an Alibuda silt loam is as follow (138) Time (h) Infiltration rate (in/h) 0.26, 0.21, 0.17, 0.13, 0.09, 0.05, 0.03, 0.01, 0, 0.07, 0.16, 0.27, 0.43, 0.67, 1.10, 2.53 (a) Determine the best values for the parameters  $f_0$ ,  $f_c$  and  $k$  for Horton's equation to describe the infiltration for Alibuda silt loam. (b) Please find the...
- A: See answer
- Q: The filtration into Yolo clay as a function of time for the steady rainfall rate of 0.5 cm/hr is shown below (Skaggs, 1982). Determine the parameters  $f_0$ ,  $f_c$  and  $k$  for the Horton's Equation. Assume that ponding occurs at 1.07 hr.
- A: See answer  [Show more >](#)

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