Activity 1

At this time, complete Activity 1 in your Study Guide to review the material just covered. After finishing the Activity, compare your answers with the solution provided. When you are satisfied that you understand the material, continue with the Study Guide text.
Using the Cypress Creek Formula, solve the following problem:

Given:

Drainage area = 1.75 mi² CN = 80
5-yr, 24-hr rainfall, $P = 5.1$ in

Find:

1. Direct Runoff, $R_e$ in
2. Coefficient $C$
3. Peak Discharge, $Q$, cfs

Solution:
Activity 2

At this time, complete Activity 2 in your Study Guide to review the material just covered. After finishing the Activity, compare your answers with the solution provided. When you are satisfied that you understand the material, continue with the Study Guide text.

Given:

Drainage Area = 60 mi² Slope = 5.0 ft/mi

Find:

The 2-yr frequency peak discharge for the design of a culvert at a farm road crossing.

Solution:
Activity 3

At this time, complete Activity 3 in your Study Guide to review the material just covered. After finishing the Activity, compare your answers with the solution provided. When you are satisfied that you understand the material, continue with the Study Guide text.

Using the rational method, solve the following problem:

Given:

Urban setting
- Drainage Area = 18 ac,
  where 1 ac = playground
  - 10 ac = single family area
  - 2 ac = streets (asphaltic)
  - 5 ac = pasture (hilly)
- Soil = heavy clay
- Tc = 20 min

Find:

The instantaneous 100-yr frequency peak discharge for design of a channel in a developing subdivision located in an area near Asheville, North Carolina.

Solution: