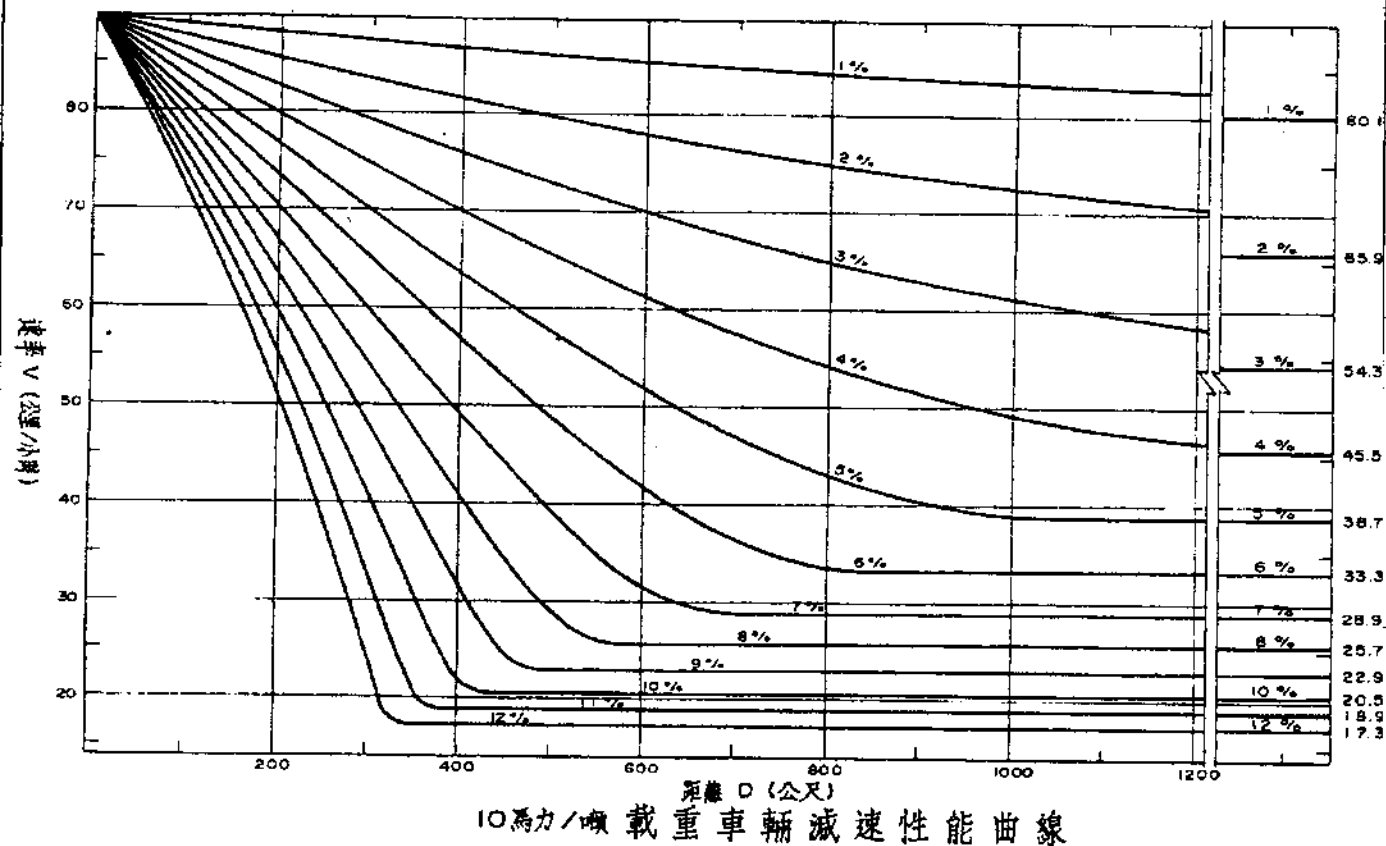


所有題目均可以用中文或英文作答。

1. Please derive the length requirement of transition curve,  $L_c = \frac{v^3}{PR}$ . [where,  $P$ : rate of centrifugal force ;  $v$ : vehicle speed ;  $R$ : radius of circular curve ; centrifugal force  $F = \frac{mv^2}{R}$ ] (15%)
2. The design vehicle is entering a consecutive grade with 90kph. The grade is composed 2 sections, 500 meter of 2% grade followed by 200 meter of 4%. What will be the vehicle speed at the end of the entire grade? (10%) Is this an appropriate design? Please state the reasons. (5%)



3. From the viewpoint of pavement structure, what can be done to prevent base course and subgrade from water infiltration? (10%)
4. Rail is normally fastened on sleepers with a 1/20 inclination. What is the purpose of the inclination? (10%)
5. Please itemize the functions of ballast. (10%)
6. Please explain the definition of the "turnout number" (10%)

(背面仍有題目,請繼續作答)

7. According to FAA

An airport is classified as C-III. Please explain what C-III means (5%)

What is the meaning and requirement of wind coverage for a standard airport? (5%)

8. Please state the criteria of site selection for a new airport. (10%)

9. Please explain the following terminologies (10%)

a. HOV lane

b. ITS