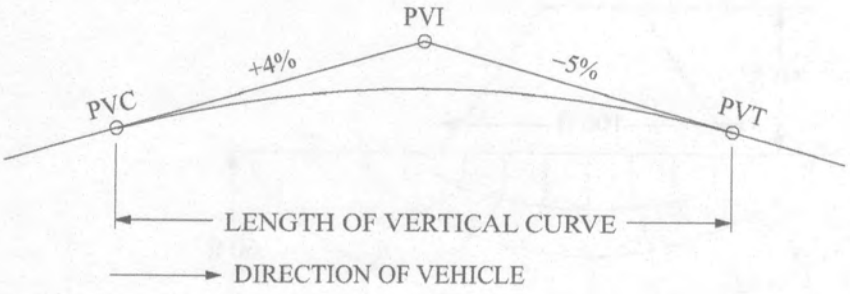
77. An equal tangent vertical curve has the following data:

Station of PVI = 30+00
Elevation of PVI = 200.00 ft
Back tangent grade = –6%
Forward tangent grade = +4%
Length of curve = 800 ft

The curve elevation (ft) at Station 31+00 is most nearly:

- ○ A. 190.38
- ○ B. 209.63
- ○ C. 211.63
- ○ D. 244.63

78. A highway profile is shown in the figure. If the design stopping sight distance is 600 ft, the driver's eye height above the roadway surface is 3.50 ft, and the height of an object in the roadway to be avoided by stopping is 1.00 ft, the minimum design length (ft) of the vertical curve is most nearly:



- ○ A. 3,600
- ○ B. 1,966
- ○ C. 1,136
- ○ D. 1,017

NEXT→

79. A horizontal circular curve has the following data:

$I = 40°50'$
$R = 600.00$
Station of $PI = 20+00.00$

The station of the PT is most nearly:

- ○ A. 22+00.76
- ○ B. 22+04.27
- ○ C. 22+23.34
- ○ D. 22+32.3

80. At two-way stop-controlled intersections, the sight distance required for minor street movements is determined by:

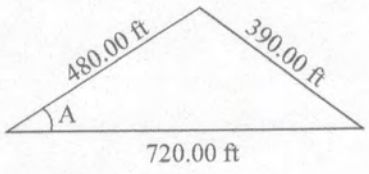
- ○ A. approach sight triangles
- ○ B. departure sight triangles
- ○ C. stopping sight distance
- ○ D. decision sight distance

NEXT→

96. An embankment having a volume of 320,000 yd^3 is to be constructed from local borrow. The dry unit weight and moisture content of the borrow material were determined to be 106 pcf and 18.2%, respectively. The embankment material has a total unit weight of 122 pcf and a moisture content of 16.7%. The volume of borrow (yd^3) needed to construct the embankment is most nearly:

- ○ A. 274,100
- ○ B. 315,500
- ○ C. 324,500
- ○ D. 373,600

97. The value of Angle A in the following figure is most nearly:



NOT TO SCALE

- ○ A. 30° 18' 47"
- ○ B. 32° 47' 50"
- ○ C. 39° 05' 38"
- ○ D. 42° 35' 09"

NEXT→

98. The cross-sectional areas to be excavated (cut) at certain sections of a road project are as follows:

Station	Area (ft^2)
3+00	247
4+00	269
4+35	322
5+00	395
5+65	418
6+00	293
7+00	168

Using the prismoidal method, the earth to be excavated (yd^3) between Sections 4+35 and 5+65 is most nearly:

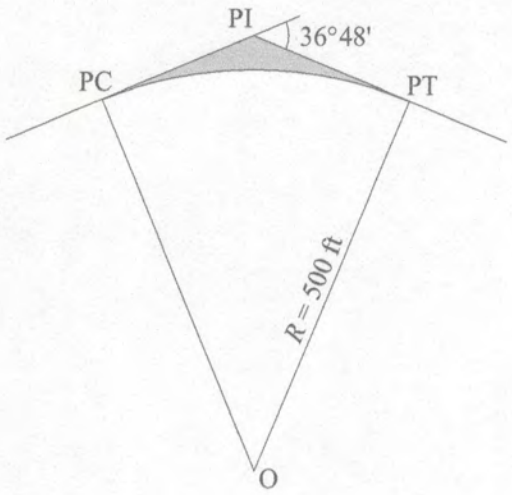
- ○ A. 1,460
- ○ B. 1,840
- ○ C. 1,860
- ○ D. 1,900

NEXT→

99. A closed traverse is run from Point B to Point K. The bearing and distance from Point B to Point C are N 18°22′ E and 487.52 ft; from Point C to Point D are S 87°10′ E and 789.16 ft; and from Point D to Point K are S 78°37′ E and 825.97 ft. The coordinates of Point B are 11,250.61 N and 8,755.32 E. The coordinates of Point K are 11,511.15 N and 10,507.23 E. The error of closure (ft) in latitude is most nearly:

- ○ A. 0.12
- ○ B. 0.27
- ○ C. 0.38
- ○ D. 0.49

100. The area inside the quadrilateral, PC, PI, PT, and O, equals 83,164 ft^2. The shaded area (ft^2) between the circular curve and the tangents is most nearly:



- ○ A. 2,879
- ○ B. 3,577
- ○ C. 5,407
- ○ D. 8,286