Dear students,

Below are the solutions to assignment #8.

1-

PI	36+45.00
D_c	4
D_a	
R	1432.68
I	24
L	600
T	304.53
E	32.01
M	31.31
LC	595.74
PC	33+40.47
PT_{Back}	42+45.00

2-

```
                Intersection Angle = 15°30'00"
              Degree of Curvature = 3°30'00"
                           Radius = 1,637.02
      Circular Curve Length = 442.86
           Tangent Distance = 222.79
Circular Curve Long Chord = 441.51
            Middle Ordinate = 14.95
                   External = 15.09

              PI Stationing = 30+44.50
              32+64.57 Back = 32+67.29 Ahead
```

Station	Chord	Defl. Increment	Defl. Angle
32+64.57	64.56	1°07'48"	7°45'00"
32+00.00	99.98	1°45'00"	6°37'12"
31+00.00	99.98	1°45'00"	4°52'12"
30+00.00	99.98	1°45'00"	3°07'12"
29+00.00	78.28	1°22'12"	1°22'12"
28+21.71			

3-

$$R = \frac{85}{\tan\frac{13°20'}{2}} = 727.221 \text{ m, so round to } 730 \text{ m.}$$

```
                Intersection Angle = 13°20'00"
              Degree of Curvature = 2°23'32"
                           Radius = 730.000
         Circular Curve Length = 169.879
              Tangent Distance = 85.325
    Circular Curve Long Chord = 169.496
             Middle Ordinate = 4.936
                    External = 4.970

                 PI Stationing = 6+356.400
               6+440.954 Back = 6+441.725 Ahead
```

Station	Chord	Defl. Increment	Defl. Angle
6+440.954	20.953	0°49'20"	6°40'00"
6+420.000	29.998	1°10'38"	5°50'40"
6+390.000	29.998	1°10'38"	4°40'01"
6+360.000	29.998	1°10'38"	3°29'23"
6+330.000	29.998	1°10'38"	2°18'45"
6+300.000	28.923	1°08'06"	1°08'06"
6+271.075			

4- By Equation 24.24: $C = [8(15)1637.02]^{1/2} = 443$ ft

Good luck,