$$PMV = [0.303e^{-0.036M} + 0.028]\{(M - W) - 3.96 \times 10^{-8} f_{cl}[(t_{cl} + 273)^4 - (t_r + 273)^4] - f_{cl} h_c (t_{cl} - t_a) - 3.05[5.73 - 0.007(M - W) - p_a] - 0.42[(M - W) - 58.15] - 0.0173M(5.87 - p_a) - 0.0014M(34 - t_a)\}$$

$$f_{cl} = 1.0 + 0.2l_{cl} \; or \; f_{cl} = 1.05 + 0.1l_{cl}$$

$$t_{cl} = 35.7 - 0.0275(M - W) - R_{cl}\{(M - W) - 3.05[5.73 - 0.007(M - W) - p_a] - 0.42[(M - W) - 58.15] - 0.0173M(5.87 - p_a) - 0.0014M(34 - t_a)\}$$

$$R_{cl} = 0.155l_{cl}$$

$$h_c = 12.1(V)^{1/2}$$

e −Euler's number (2.718)
f_{cl} −Clothing factor
h_c − Convective heat transfer coefficient
l_{cl} − Clothing insulation [clo]
M − Metabolic rate [W/m2]
p_a − Vapor pressure of air [kPa]
R_{cl} −Clothing thermal insulation
t_a − Air temperature [℃]
t_{cl} − Surface temperature of clothing [℃]
t_r −Mean radiant temperature [℃]
v −Air velocity [m/s]
W − External work

Let's solve equations for a point.

$f_{cl} = 1.0 + 0.2l_{cl}$

$f_{cl} = 1.0 + 0.2 \times 0.5 = 1.1$

$R_{cl} = 0.155l_{cl}$

$R_{cl} = 0.155 \times 0.5 = 0.0775$

$h_c = 12.1(V)^{1/2}$

$h_c = 12.1(1.2)^{1/2}$=13.25489

$t_{cl} = 35.7 - 0.0275(M - W) - R_{cl}\{(M - W) - 3.05[5.73 - 0.007(M - W) - p_a] - 0.42[(M - W) - 58.15] - 0.0173M(5.87 - p_a) - 0.0014M(34 - t_a)\}$

$$t_{cl} = 35.7 - 0.0275 \times (69.6 - 0) - 0.0775 \times \{(69.6 - 0) - 3.05 \times [5.73 - 0.007 \times (69.6 - 0) - 3.504] - 0.42 \times [(69.6 - 0) - 58.15] - 0.0173 \times 69.6 \times (5.87 - 3.504) - 0.0014 \times 69.6(34 - 34.9)\}$$

$$t_{cl} = 29.3897$$

$$PMV = [0.303 \times 2.718^{-0.036 \times 69.6} + 0.028] \times \{(69.6 - 0) - 3.96 \times 10^{-8} \times 1.1 \times [(29.3897 + 273)^4 - (53.77059 + 273)^4] - 1.1 \times 13.25489 \times (29.3897 - 34.9) - 3.05 \times [5.73 - 0.007 \times (69.6 - 0) - 3.504\ ] - 0.42 \times [(69.6 - 0) - 58.15] - 0.0173 \times 69.6 \times (5.87 - 3.504\ ) - 0.0014 \times 69.6(34 - 34.9\ )\}$$

$$PMV = 7.2455$$

According to above mentioned equations has been solved respectively. Then pmv is calculated.

$$\boldsymbol{PPD = 100 - 95e^{[-(0.03353PMV^4 + 0.2179PMV^2)]}}$$

According to above data, find related PPD value for a point.

$$PPD = 100 - 95e^{[-(0.03353 \times 7.2455^4 + 0.2179 \times 7.2455^2)]}$$

=100