

T= number of triangles

P=number of pentagons

$$F=T+P$$

$$E = \frac{P \cdot 5 + T \cdot 3}{2}$$

$$V = \frac{5P + 3T}{4}$$

$$V - E + F = 2$$

$$\frac{5P + 3T}{4} - \frac{5P + 3T}{2} + P + T = 2$$

$$(5P + 3T) - 2(5P + 3T) + 4(P + T) = 4 \cdot 2$$

$$5P + 3T - 10P - 6T + 4P + 4T = 8$$

$$-P + T = 8$$

$$T = P + 8$$

$$T = \frac{P \cdot 5}{3} \quad T = P + 8$$

$$\frac{5P}{3} = P + 8$$

$$5P = 3P + 24$$

$$2P = 24$$

$$P = 12$$

$$T = 12 + 8 = 20$$