

1. $\frac{55}{8}$

2. 18°

3. 10

4. $\frac{\omega^{1+n} - \omega^{1-n}}{\omega^2 - 1}$

5. $\frac{2}{3}\sqrt{2}$

6. 16

7. $1 \pm \sqrt{5}$

8. 960

9. $[x(y+2z) + y(z+2x) + z(x+2y)] \left[\frac{x}{y+2z} + \frac{y}{z+2x} + \frac{z}{x+2y} \right] \geq (x+y+z)^2 \geq 3(xy+yz+zx)$

$\left[\frac{x}{y+2z} + \frac{y}{z+2x} + \frac{z}{x+2y} \right] \geq 1$

10. $22x+14$

11. $\max : 2, \min : \frac{50}{27}$