7. Single
$V_{dd} = 1.3v$ $freq = 1.3\,GHz$ $P = 20w$
Quad: $\frac{1}{4}$, $V_{DD} = 0.9$, $f = 0.9\,GHz$

a) Power consumption

$P_{single} = 20\,w$

$$P_{multi} = P_{single} \times 4 \times \left(\frac{0.9}{1.3}\right)^2 \times \left(\frac{0.9\,GHz}{1.3\,GHz}\right)$$

$$= 20 \times 4 \times \left(\frac{0.9}{1.3}\right)^2 \times \left(\frac{0.9}{1.3}\right)$$

$$= 6.636 \text{ watts}$$