H 2.4

b) With low subsampling ratios (up to 4) the effect is barely noticable. With subsampling ratio of 8 and higher, the chroma blocks became visible. It shows how human perception is much more sensitive to luminosity changes, than the chroma.

c) Subsampling of S reduces the Cb/Cr array h/w size S times.

For RGB / S=1

$3 \cdot 8 \cdot h \cdot w = 24 \cdot h \cdot w$

S=2

$8 \cdot h \cdot w + 2 \cdot 8 \cdot \frac{h}{2} \cdot \frac{w}{2} = (8+4) \cdot h \cdot w$, 12 bits per pixel

S=4

$8 \cdot h \cdot w + 2 \cdot 8 \cdot \frac{h}{4} \cdot \frac{w}{4} = (8+1) h \cdot w$, 9 bits per pixel

S=8

$8 \cdot h \cdot w + 2 \cdot 8 \cdot \frac{h}{8} \cdot \frac{w}{8} = (8+\frac{1}{4}) h \cdot w$, 8,25 bits per pixel