KORREKTURVORLAGE 7D M. W 2

10.06 a) $5+8i$ b) $10+3i$ c) $3+3i$

10.08 a) $\frac{3}{4} + 2\frac{1}{4}\cdot i = \frac{3+9i}{4}$ b) $\frac{1}{12} + 1\frac{1}{2}\cdot i = \frac{1+18i}{12}$

10.10 a) $(1+i)^2 = 1+2i+i^2 = 2i$

b) $(1-i)^2 = 1-2i+i^2 = -2i$

d) $(8-6i)^2 = 8^2 - 2\cdot 8\cdot 6\cdot i + (6i)^2$

$= 64 - 96i - 36$

$= 28 - 96i$

10.12 a) $\frac{4+i}{2+3i} = \frac{4+i}{2+3i}\cdot\frac{2-3i}{2-3i} = \frac{8-12i+2i-3i^2}{2^2+9^2}$

$= \frac{11-10i}{13} = \frac{11}{13} - \frac{10}{13}\cdot i$

b) $\frac{1-i}{2+3i} = \frac{1-i}{2+3i}\cdot\frac{2-3i}{2-3i} = \frac{2-3i-2i-3}{13} = \frac{-1-5i}{13}$

$= -\frac{1}{13} - \frac{5}{13}i$

c) $\frac{5+3i}{2-2i} = \frac{5+3i}{2-2i}\cdot\frac{2+2i}{2+2i} = \frac{4+16i}{4+4} = \frac{1}{2} + 2i$

f) $\frac{i}{2-i} = \frac{i}{2-i}\cdot\frac{2+i}{2+i} = \frac{2i-1}{2^2+1^2} = -\frac{1}{5} + \frac{2}{5}i$

10.14 a) $\frac{1}{i} = \frac{1}{i}\cdot\frac{-i}{-i} = \frac{-i}{1} = -i$ b) $-\frac{1}{i} =$ (siehe a) $= +i$ „minus" von a)

e) $\frac{1}{i^2} = \frac{1}{-1} = -1$ g) $\frac{i}{i^2} = \frac{1}{i} = -i$ (siehe a)