(1) $\sin\theta+\cos\theta=\frac{1}{2}$ の両辺を2乗して

$(\sin\theta+\cos\theta)^2=\frac{1}{4}$ より

$\sin^2\theta+2\sin\theta\cos\theta+\cos^2\theta=\frac{1}{4}$

$1+2\sin\theta\cos\theta=\frac{1}{4}$

$2\sin\theta\cos\theta=-\frac{3}{4}$

よって $\boxed{\sin\theta\cos\theta=-\frac{3}{8}}$

(2) $\sin^3\theta+\cos^3\theta=(\sin\theta+\cos\theta)(\sin^2\theta-\sin\theta\cos\theta+\cos^2\theta)$

$=\frac{1}{2}\times\left(1+\frac{3}{8}\right)$

$=\frac{1}{2}\times\frac{11}{8}=\boxed{\frac{11}{16}}$

(3) $\sin^4\theta+\cos^4\theta=(\sin\theta+\cos\theta)(\sin^3\theta+\cos^3\theta)-\sin\theta\cos^3\theta-\sin^3\theta\cos\theta$

$=(\sin\theta+\cos\theta)(\sin^3\theta+\cos^3\theta)-\sin\theta\cos\theta(\sin^2\theta+\cos^2\theta)$

$=\frac{1}{2}\times\frac{11}{16}-\left(-\frac{3}{8}\right)\times1$

$=\frac{11}{32}+\frac{12}{32}=\boxed{\frac{23}{32}}$

(4) $\sin^5\theta+\cos^5\theta=(\sin^2\theta+\cos^2\theta)(\sin^3\theta+\cos^3\theta)-\sin^2\theta\cos^3\theta-\sin^3\theta\cos^2\theta$

$=1\times\frac{11}{16}-\sin^2\theta\cos^2\theta(\sin\theta+\cos\theta)$

$=\frac{11}{16}-\left(-\frac{3}{8}\right)^2\times\frac{1}{2}$

$=\frac{11}{16}-\frac{9}{128}$

$=\frac{88-9}{128}=\boxed{\frac{79}{128}}$