

Compute these integrals EXACTLY

$$1) \int_0^1 (2x - 6x^4 + 5) dx =$$

$$2) \int_{-1}^1 (x-1)(x+2) dx =$$

$$3) \int_1^2 \frac{dt}{t^2} =$$

$$4) \int_1^2 \sqrt{x-1} dx =$$

$$5) \int_{-1}^1 x(x^2 - 1)^4 dx =$$

$$6) \int_0^1 20x^2 (x^3 - 1)^{1/3} dx =$$