

# Arbeidshefte

## Integralregning

### Bestemt integral - Areal og volum

## Bestemt integral

$$\int_a^b f(x) dx = [F(x)]_a^b = F(b) - F(a)$$

### Oppgave 1

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

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

3)  $\int_1^e \frac{1}{x} dx =$

4)  $\int_1^4 (\frac{1}{4}x^2 - x + 4) dx =$

5)  $\int_0^{\ln 2} e^{2x} dx =$

6)  $\int_0^{\pi/2} \cos(x) dx =$

## Oppgave 2

$$1) \int_0^2 \cos(\pi x) dx =$$

$$2) \int_0^2 \sin\left(\frac{\pi}{3}x\right) dx =$$

$$3) \int_0^2 \frac{2x^2}{x^3+1} dx =$$

$$4) \int_0^{\pi/2} (\sin x + 2) dx =$$

$$5) \int_0^{\pi} \sin x dx =$$

$$6) \int_0^e x \cdot \ln x dx =$$

$$7) \int_1^e \frac{3}{x} dx =$$

## FASIT

### Oppgave 1

1) 16

4)  $\frac{39}{4}$

2)  $\frac{16}{3}$

5)  $\frac{3}{2}$

3) 1

6) 1

### Oppgave 2

1) 0

5) 2

2)  $\frac{9}{2\pi}$

6)  $\frac{e^2}{4}$

3)  $\frac{4\ln 3}{3}$

4)  $\pi + 1$

7) 3