

## Integrating many Terms

### Integrating many Terms

- Integrate each term separately

Examples

Integrate

1) 
$$\int (r^5 - r^{-\frac{3}{5}} - r^{-\frac{8}{3}} + 7) dr$$

$$= \frac{r^6}{6} - \frac{r^{\frac{2}{5}}}{\frac{2}{5}} - \frac{r^{-\frac{5}{3}}}{-\frac{5}{3}} + 7r + C$$
$$= \frac{r^6}{6} - \frac{5}{2} r^{\frac{2}{5}} + \frac{3}{5} r^{-\frac{5}{3}} + 7r + C$$

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Examples

Integrate

OR

1)  $\int (r^5 - r^{-\frac{3}{5}} - r^{-\frac{8}{3}} + 7) dr$

$$= \frac{r^6}{6} - \frac{5}{2} r^{\frac{2}{5}} + \frac{3}{5} r^{-\frac{5}{3}} + 7r + C$$

$$= \frac{1}{6} r^6 - \frac{5}{2} \sqrt[5]{r^2} + \frac{3}{5 \sqrt[3]{r^5}} + 7r + C$$

## Lesson 2. Integrating Expressions

$$2) \int (3x^5 - x^{-\frac{4}{3}} + 15x^{-\frac{1}{4}}) dx$$

$$= \frac{3x^6}{6} - \frac{x^{-\frac{1}{3}}}{-\frac{1}{3}} + \frac{15x^{\frac{3}{4}}}{\frac{3}{4}} + C$$

$$= \frac{1}{2}x^6 + 3x^{-\frac{1}{3}} + 20x^{\frac{3}{4}} + C$$

$$\frac{x^6}{2}$$

or

$$15 \times \frac{4}{3}$$

## Lesson 2. Integrating Expressions

$$2) \int (3x^5 - x^{-\frac{4}{3}} + 15x^{-\frac{1}{4}}) dx$$

OR

$$= \frac{3x^6}{6} + 3x^{-\frac{1}{3}} + \frac{4}{3} \times 15x^{\frac{3}{4}} + C$$

$$= \frac{1}{2}x^6 + \frac{3}{\sqrt[3]{x}} + 20\sqrt[4]{x^3} + C$$

## Integrating many Terms

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