

10.4

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

$$2) \int x^3 dx = \frac{1}{3+1} x^{3+1} = \frac{1}{4} x^4 + c$$

$$3) \int 7 x^4 dx = 7 \int x^4 dx = 7 \cdot \frac{1}{4+1} x^{4+1} = 7 \cdot \frac{1}{5} x^5 = \frac{7}{5} x^5 + c$$

$$4) \int 5 x dx = 5 \int x dx = 5 \cdot \frac{1}{1+1} x^{1+1} = 5 \cdot \frac{1}{2} x^2 = \frac{5}{2} x^2 + c$$

$$5) \int 3 dx = 3 \int dx = 3 \int x^0 dx = 3 \cdot \frac{1}{0+1} x^{0+1} = 3 \cdot 1 \cdot x^1 = 3 x + c$$

$$6) \int (2x - 1) dx = \int 2x dx + \int (-1) dx = 2 \int x dx - \int dx = 2 \cdot \frac{1}{2} x^2 - x \\ = x^2 - x + c$$

$$7) \int (3x^2 + 5x - 1) dx = \int 3x^2 dx + \int 5x dx + \int (-1) dx \\ = 3 \int x^2 dx + 5 \int x dx - \int dx \\ = 3 \cdot \frac{1}{3} x^3 + 5 \cdot \frac{1}{2} x^2 - x \\ = x^3 + \frac{5}{2} x^2 - x + c$$

$$8) \int (-7x^4 + 3x^3 - x^2 + 2x - 1) dx = -7 \cdot \frac{1}{5} x^5 + 3 \cdot \frac{1}{4} x^4 - \frac{1}{3} x^3 + 2 \cdot \frac{1}{2} x^2 - x \\ = -\frac{7}{5} x^5 + \frac{3}{4} x^4 - \frac{1}{3} x^3 + x^2 - x + c$$

$$9) \int (3x^5 - 4x^4 + x^3 - 2) dx = 3 \cdot \frac{1}{6} x^6 - 4 \cdot \frac{1}{5} x^5 + \frac{1}{4} x^4 - 2x \\ = \frac{1}{2} x^6 - \frac{4}{5} x^5 + \frac{1}{4} x^4 - 2x + c$$

$$10) \int \left(\frac{1}{5} x^4 + \frac{3}{2} x^3\right) dx = \frac{1}{5} \cdot \frac{1}{5} x^5 + \frac{3}{2} \cdot \frac{1}{4} x^4 = \frac{1}{25} x^5 + \frac{3}{8} x^4 + c$$

$$11) \int \left(-\frac{1}{3} x^2 + \frac{2}{5} x - \frac{1}{4}\right) dx = -\frac{1}{3} \cdot \frac{1}{3} x^3 + \frac{2}{5} \cdot \frac{1}{2} x^2 - \frac{1}{4} x = -\frac{1}{9} x^3 + \frac{1}{5} x^2 - \frac{1}{4} x + c$$

$$12) \int \left(\frac{5}{3} x^4 - \frac{3}{4} x^2 + 1\right) dx = \frac{5}{3} \cdot \frac{1}{5} x^5 - \frac{3}{4} \cdot \frac{1}{3} x^3 + x = \frac{1}{3} x^5 - \frac{1}{4} x^3 + x + c$$