Aufgabe 1:

a) $\int_{-2}^{3} x^5\,dx =$
$[\frac{x^6}{6}]_{-2}^{3} = (\frac{243}{2}) - (\frac{32}{3}) = 110.83$

b) $\int_{-4}^{-2} x^7\,dx =$
$[\frac{x^8}{8}]_{-4}^{-2} = (32) - (8192) = -8160$

c) $\int_{-3}^{-1} x^4\,dx =$
$[\frac{x^5}{5}]_{-3}^{-1} = (-\frac{1}{5}) - (-\frac{243}{5}) = 48.4$

Aufgabe 2:

a) $\int_{-4}^{-1} -2x^7\,dx =$
$[-\frac{x^8}{4}]_{-4}^{-1} = (-\frac{1}{4}) - (-16384) = 16384.0$

b) $\int_{0}^{1} x^2\,dx =$
$[\frac{x^3}{3}]_{0}^{1} = (\frac{1}{3}) - (0) = 0.33333$

c) $\int_{-3}^{-1} -2x^7\,dx =$
$[-\frac{x^8}{4}]_{-3}^{-1} = (-\frac{1}{4}) - (-\frac{6561}{4}) = 1640$

Aufgabe 3:

a) $\int_{-3}^{2} -3x^7 - 4x^5\,dx =$
$[-\frac{3x^8}{8} - \frac{2x^6}{3}]_{-3}^{2} =$
$(-\frac{416}{3}) - (-\frac{23571}{8}) = 2807.7$

b) $\int_{-3}^{2} -3x^3\,dx =$
$[-\frac{3x^4}{4}]_{-3}^{2} = (-12) - (-\frac{243}{4}) = 48.75$

c) $\int_{1}^{1} 5x^7 - 3x^5\,dx =$
$[\frac{5x^8}{8} - \frac{x^6}{2}]_{1}^{1} = (\frac{1}{8}) - (\frac{1}{8}) = 0$

Aufgabe 4:

a) $\int_{-3}^{-1} 4x^5\,dx =$
$[\frac{2x^6}{3}]_{-3}^{-1} = (\frac{2}{3}) - (486) = -485.33$

b) $\int_{-1}^{2} -3x^2 - 3x\,dx =$
$[-x^3 - \frac{3x^2}{2}]_{-1}^{2} =$
$(-14) - (-\frac{1}{2}) = -13.5$

c) $\int_{1}^{5} 2x^7 + x^4\,dx =$
$[\frac{x^8}{4} + \frac{x^5}{5}]_{1}^{5} = (\frac{393125}{4}) - (\frac{9}{20}) = 98281.0$

Aufgabe 5:

a) $-2x - 1 = 0$
$x = -\frac{1}{2}$

b) $4x = -3$
$x = -\frac{3}{4}$

c) $-x + 3 = 5$
$x = -2$

Aufgabe 6:

a) $4x^2 - 2x - 3 = 0$
$x_1 = 1.2,\ x_2 = -0.65$

b) $-2x^2 - 3x + 3 = 0$
$x_1 = 0.69,\ x_2 = -2.2$

c) $-x^2 + 2x + 1 = 0$
$x_1 = 2.4,\ x_2 = -0.41$

Aufgabe 7:

a) $-3x^2 + x - 4 = 0$
Keine Lösung

b) $3x^2 + x + 3 = 0$
Keine Lösung

c) $4x^2 + 2x + 1 = 0$
Keine Lösung