Bestimme den Flächeninhalt im Intervall

1) $f(x) = 5x^5 - 8x^2$ [2;3]

2) $f(x) = 2x^4 - 4x$ [3;4]

3) $f(x) = 7x^5 - 8x^3 + 4x$ [1;2]

4) $f(x) = 6x^3 - 7x - 3$ [2;5]

5) $f(x) = 3x^5 + 4x^4 - 5x^2$ [1;2]

6) $f(x) = 2x^6 + 3x^5 + 4x^3 + 2x^2$ [0;3]

7) $f(x) = 7x^7 - 4x^6 - 3x^4 + 6x^2$ [0;3]

8) $f(x) = 2x^5 + 7x^3 + 5x^2 - 6x$ [-1;6]

9) $f(x) = 8x^8 - 7x^5 - 2x^4 + 3x^2 + 8$ [-1;1]

10) $f(x) = 2x^8 + 2x^5 + 8x^4 - 3x^3 + 4x^2$ [0;1]

11) $f(x) = 8x^8 + 2x^7 - 6x^6 + 5x^4 - 4x^2$ [0;2]

Lösung

1) $F(X) = \frac{5x^6}{6} - \frac{8x^3}{3}$ A= 535,5 - 32=503,5 FE

2) $F(X) = \frac{2x^5}{5} - \frac{4x^2}{2}$ A= 377,6 - 79,2=298,4 FE

3) $F(X) = \frac{7x^6}{6} - \frac{8x^4}{4} + \frac{4x^2}{2}$ A= 50,6667 - 1,1667=49,5 FE

4) $F(X) = \frac{6x^4}{4} - \frac{7x^2}{2} - \frac{3x}{}$ A= 835 - 4=831 FE

5) $F(X) = \frac{3x^6}{6} + \frac{4x^5}{5} - \frac{5x^3}{3}$ A= 44,2667 - (-0,3667)=44,63 FE

6) $F(X) = \frac{2x^7}{7} + \frac{3x^6}{6} + \frac{4x^4}{4} + \frac{2x^3}{3}$ A= 1088,3571 - 0=1088,36 FE

7) $F(X) = \frac{7x^8}{8} - \frac{4x^7}{7} - \frac{3x^5}{5} + \frac{6x^3}{3}$ A= 4399,3607 - 0=4399,36 FE

8) $F(X) = \frac{2x^6}{6} + \frac{7x^4}{4} + \frac{5x^3}{3} - \frac{6x^2}{2}$ A= 18072 - (-2,5833)=18074,58 FE

9) $F(X) = \frac{8x^9}{9} - \frac{7x^6}{6} - \frac{2x^5}{5} + \frac{3x^3}{3} + \frac{8x}{}$ A= 8,3222 - (-10,6556)=18,98 FE

10) $F(X) = \frac{2x^9}{9} + \frac{2x^6}{6} + \frac{8x^5}{5} - \frac{3x^4}{4} + \frac{4x^3}{3}$ A= 2,0722 - 0=2,07 FE

11) $F(X) = \frac{8x^9}{9} + \frac{2x^8}{8} - \frac{6x^7}{7} + \frac{5x^5}{5} - \frac{4x^3}{3}$ A= 302,7302 - 0=302,73 FE