

1.-

a) Sol: $I = \frac{2}{35} \sqrt{x-1} (5x^3 + 6x^2 + 8x + 16) + C$

b) Sol: $I = \frac{2}{3} \ln |(\sqrt{x+2} - 1)| + \frac{4}{3} \ln |(\sqrt{x+2} + 2)| = \frac{2}{3} \ln |(\sqrt{x+2} + x)(\sqrt{x+2} + 2)| + C$

c) Sol: $I = \ln \left| \frac{\sqrt{x+1} + \sqrt{x-1}}{\sqrt{x+1} - \sqrt{x-1}} \right| - 2 \arctan \sqrt{\frac{x-1}{x+1}} + C$

d) Sol: $I = \frac{2}{3}(1+x)^{3/2} + \frac{3}{4}(1+x)^{4/3} + \frac{6}{7}(1+x)^{7/6} + (1+x) + \frac{6}{5}(1+x)^{5/6} + \frac{3}{2}(1+x)^{2/3} + C$

e) Sol: $I = \sqrt{4-x^2} - 4 \arctan \sqrt{\frac{2-x}{2+x}} + C$

f) Sol: $I = 2 \arctan \sqrt{\frac{1+x}{1-x}} - \sqrt{1-x^2} + C$

2.-

a) Sol: $I = \frac{1}{a^2} \frac{x}{\sqrt{a^2 - x^2}} + C$ ($a \neq 0$); si $a = 0$, I no existe.

b) Sol: $I = -\frac{1}{a^2} \frac{x}{\sqrt{x^2 - a^2}} + C$ ($a \neq 0$); si $a = 0$, $I = -\frac{1}{2x^2} + C$.

c) Sol: $I = -\frac{1}{a^2} \frac{x}{\sqrt{x^2 - a^2}} + C$ ($a \neq 0$); si $a = 0$, $I = -\frac{1}{2x^2} + C$.

d) Sol: $I = \frac{a^2}{2} \arcsen \frac{x}{a} + \frac{x}{2} \sqrt{a^2 - x^2} + C$ ($a \neq 0$); si $a = 0$, I no existe.

e) Sol: $I = \frac{1}{2} \arccos \frac{1}{x} + \frac{1}{2} \frac{\sqrt{x^2 - 1}}{x^2} + C$.

f) Sol: $I = -\frac{1+2x^2}{x\sqrt{1+x^2}} + C$.

3.-

a) Sol: $I = \frac{x-3}{\sqrt{4x^2 - 24x + 37}} + C$

b) Sol: $I = \frac{1}{9} \frac{x+2}{\sqrt{-4x^2 - 16x - 7}} + C$

c) Sol: $I = -\frac{x+1}{\sqrt{x^2 + 2x}} + C$

d) Sol: $I = \frac{x-1}{\sqrt{2-2x+x^2}} + C$

e) Sol: $I = \frac{x-b}{a^2\sqrt{a^2-b^2+2bx-x^2}} + C$ ($a \neq 0$); si $a = 0$, I no existe.

f) Sol: $I = \frac{b-x}{a^2\sqrt{b^2-a^2-2bx+x^2}} + C$ ($a \neq 0$); si $a = 0$, $I = -\frac{1}{2(x-b)^2} + C$

4.-

a) Sol: $I = \frac{2x+3}{4}\sqrt{x^2-x-1} + \frac{7}{8}\ln\left|x-\frac{1}{2}+\sqrt{x^2-x-1}\right| + C$

b) Sol: $I = \sqrt{x^2-2x+2} + \ln\left|x-1+\sqrt{x^2-2x+2}\right| + C$

c) Sol: $I = \sqrt{x^2+x+1} - \frac{5}{2}\ln\left|x+\frac{1}{2}+\sqrt{x^2+x+1}\right| + C$

d) Sol: $I = \frac{x}{4}\sqrt{2x^2-1} + \frac{5}{4\sqrt{2}}\ln\left|\sqrt{2}x+\sqrt{2x^2-1}\right| + C$

e) Sol: $I = -\arcsen\frac{3-2x}{\sqrt{5}(x-1)} + C$

f) Sol: $I = \frac{1}{x}\sqrt{x^2+2x-1} - \arcsen\frac{1-x}{\sqrt{2}x} + C$
