(4) $\int (x^3 + 3x + 5)\,dx = \boxed{\frac{x^4}{4} + \frac{3x^2}{2} + 5x + C}$

(6) $\int \left(2e^x + x^4 + \sec(x)\tan(x)\right)dx = \boxed{2e^x + \frac{x^5}{5} + \sec(x) + C}$

(20) $\int \left(\frac{1}{x^3} + \sqrt{x}\right)dx = \int \left(x^{-3} + x^{1/2}\right)dx$

$= \frac{1}{-3+1}x^{-3+1} + \frac{1}{\frac{1}{2}+1}x^{\frac{1}{2}+1} + C = -\frac{1}{2}x^{-2} + \frac{1}{3/2}x^{3/2} + C$

$= \boxed{-\frac{1}{2x^2} + \frac{2}{3}\sqrt{x^3} + C}$

(28) $\int \left(x + \frac{1}{\sqrt{1-x^2}}\right)dx = \boxed{\frac{x^2}{2} + \sin^{-1}(x) + C}$

(34) $\int \frac{x^2+1}{2x}\,dx = \int \frac{x^2}{2x} + \frac{1}{2x}\,dx = \int \left(\frac{1}{2}x + \frac{1}{2}\frac{1}{x}\right)dx$

$= \frac{1}{2}\frac{1}{2}x^2 + \frac{1}{2}\ln|x| + C = \boxed{\frac{x^2}{4} + \frac{1}{2}\ln|x| + C}$

(38) Is $\int \left(\cos(x)\frac{1}{x} - \sin(x)\ln(x)\right)dx = \cos(x)\ln(x) + C$

True or false? Let's check: $\frac{d}{dx}\left[\cos(x)\ln(x) + C\right]$

$= -\sin(x)\ln(x) + \cos(x)\frac{1}{x}$ (by product rule)

$= \cos(x)\frac{1}{x} - \sin(x)\ln(x)$. So <u>YES</u> <u>it's</u> <u>true</u>!