Exercise 9E.

1. $(ax+b)^n$
2. $\frac{1}{ax+b}$
3. Expand C1/C2
4) $\sin 2x$
5) formula bk.
6) By parts
7) separate C1/C2
8) Partial fractions / Improper.
9) Substn OR reverse chain
10) By parts OR learn.
11) Partial fractions
12) $\frac{f'(x)}{f(x)^n}$ Reverse chain OR Substn. $u = 1+\tan x$
13) use $\cos 2x$
14) Alg. long ÷
15) Expand then use $\cos 2x$ and $\sin 2x$
16) By parts (twice!)
17) Partial fraction
18) Substn. OR reverse chain $u = 9x^2+1$
19) ~~Expand~~. C1/C2
20) $(ax+b)^n$
21) $\frac{1}{ax+b}$
22) formula bk.
23) C3 formula bk.
24) Trig identity. $\cot^2 3x + 1 = \operatorname{cosec}^2 3x$ then C3 formula bk.
25) By parts
26) Substitution $(u = x-1)$
27) By parts
28) Use $\cos 2x = 2\cos^2 x - 1$, expand, reverse chain / substitⁿ
29) Use $\sin 2x = 2\sin x \cos x$, reverse chain / substⁿ.
30) C3 formula bk
31) ~~Substn let $u = x^2+1$ (MESSY!)~~ IMPROPER! then reverse chain.

32) Partial fractions

33) Partial fractions $\frac{A}{x} + \frac{B}{x^2} + \frac{C}{x-1}$

34) C3 formula bk.

35) Improper fraction

36) Partial fractions $\frac{A}{x} + \frac{B}{x-1} + \frac{C}{x+1}$

37) Rerverse chain or substn. $u = x^3 + 1$

38) expand and "abit of by parts"

39) By parts

40) Substitution $u = x^2$ then by parts.