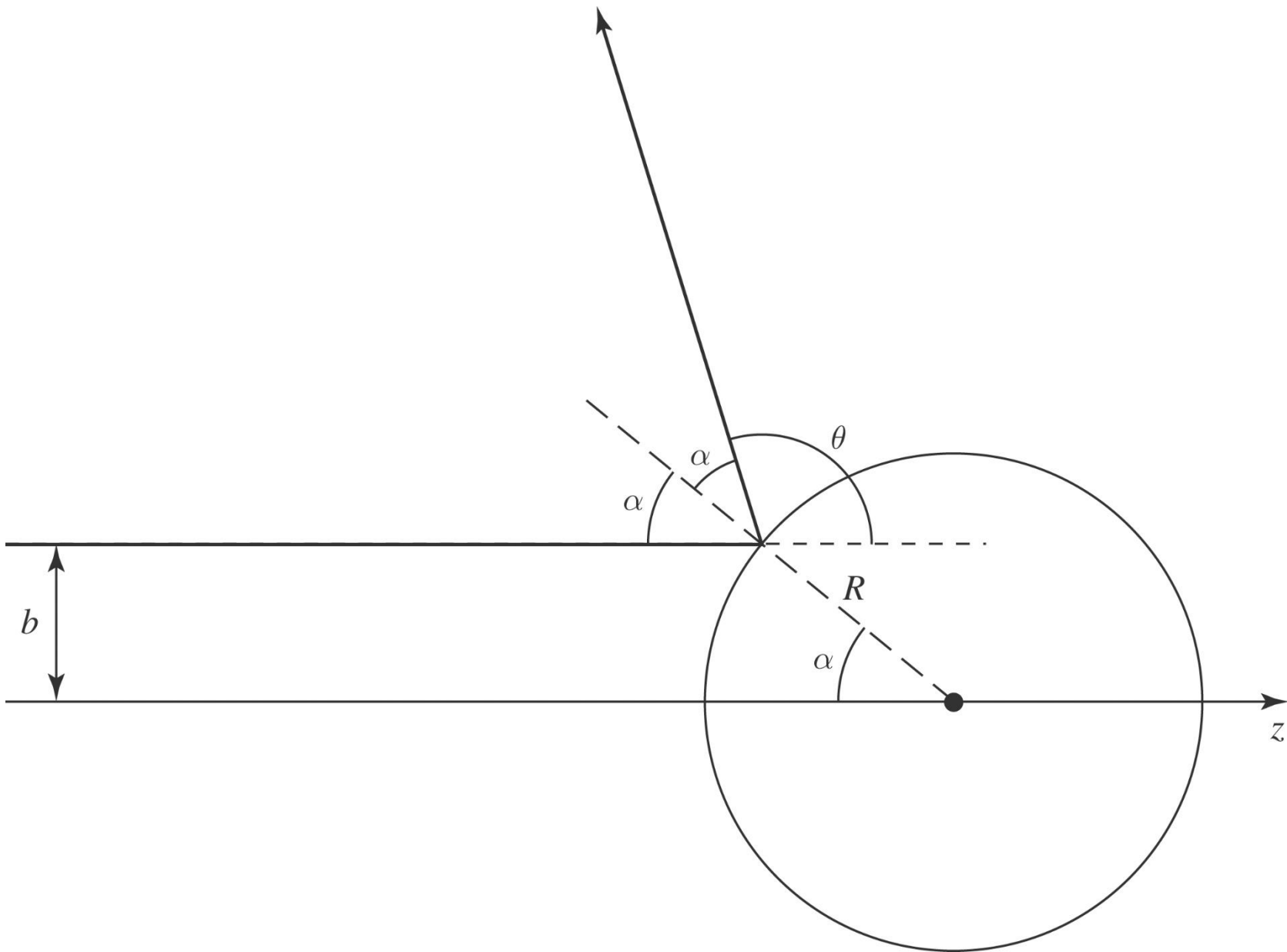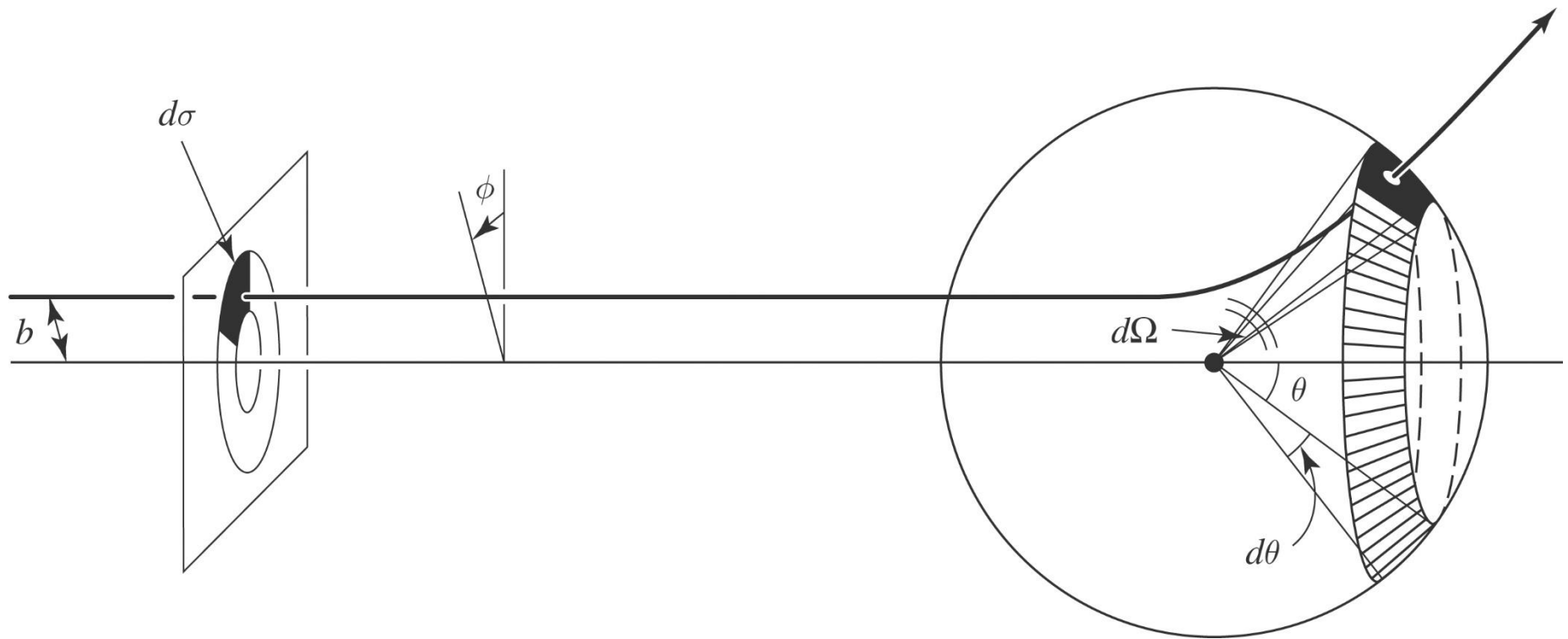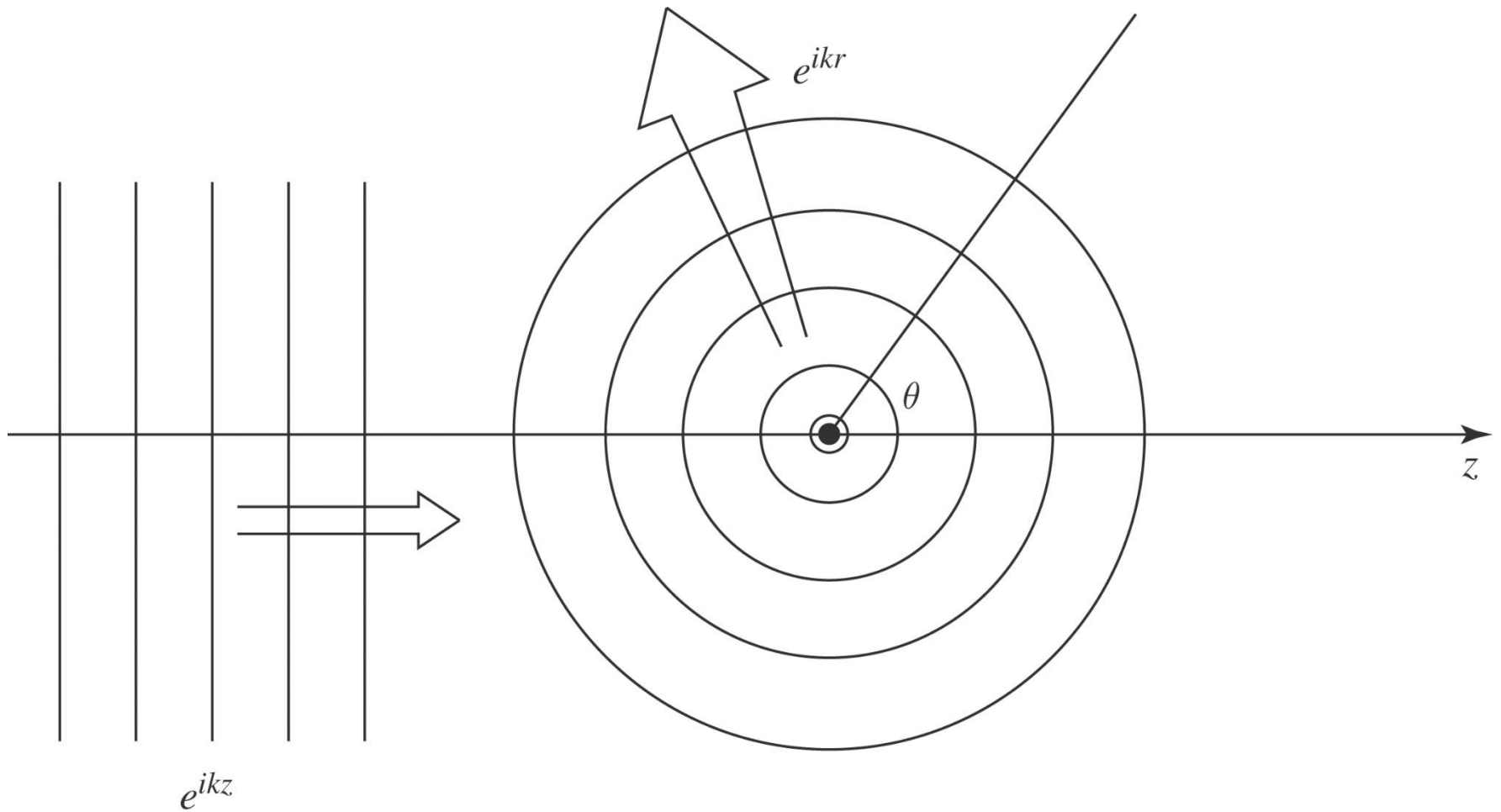DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_1

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_2

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_3

e^{ikr}

e^{ikz}

θ

z

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$d\sigma$

v

$v\,dt$

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_5

Intermediate region $V \cong 0$

Radiation zone $(kr \gg 1)$
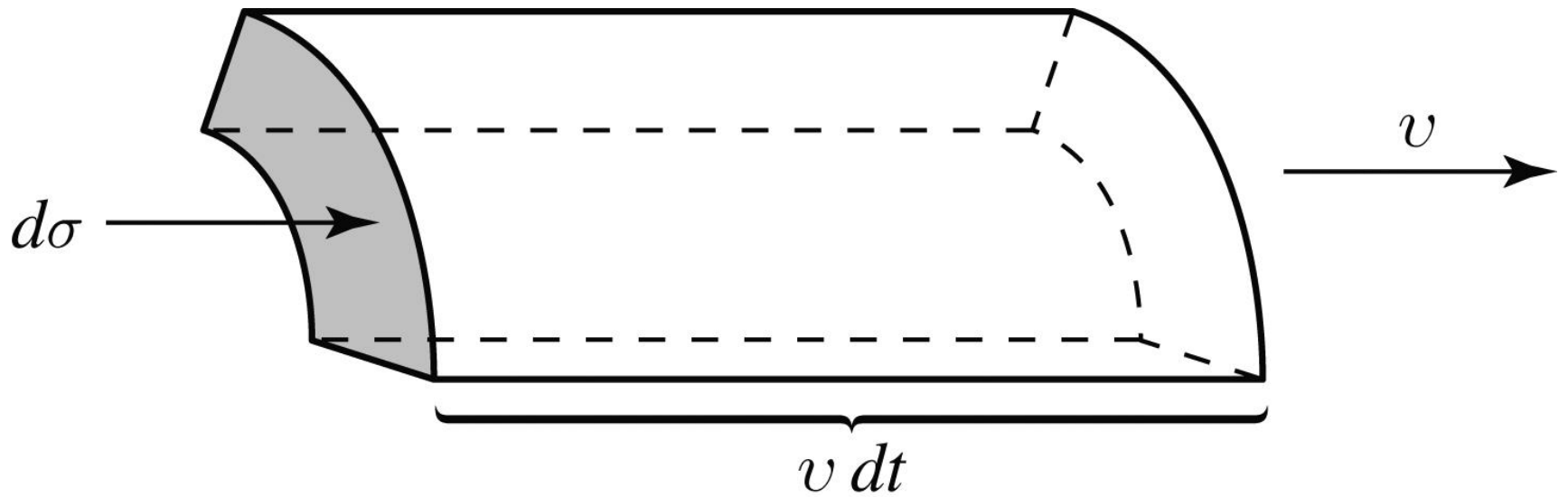
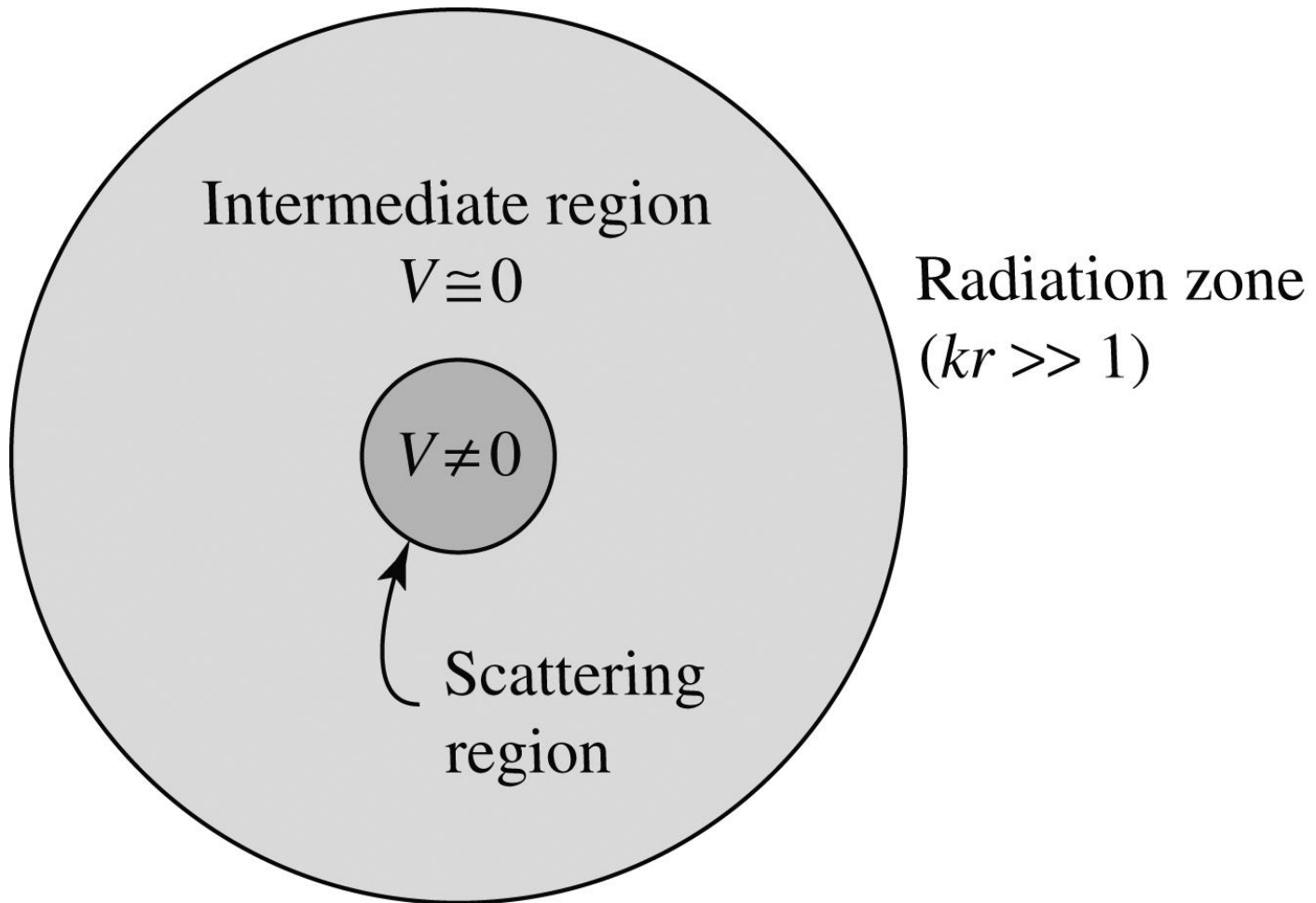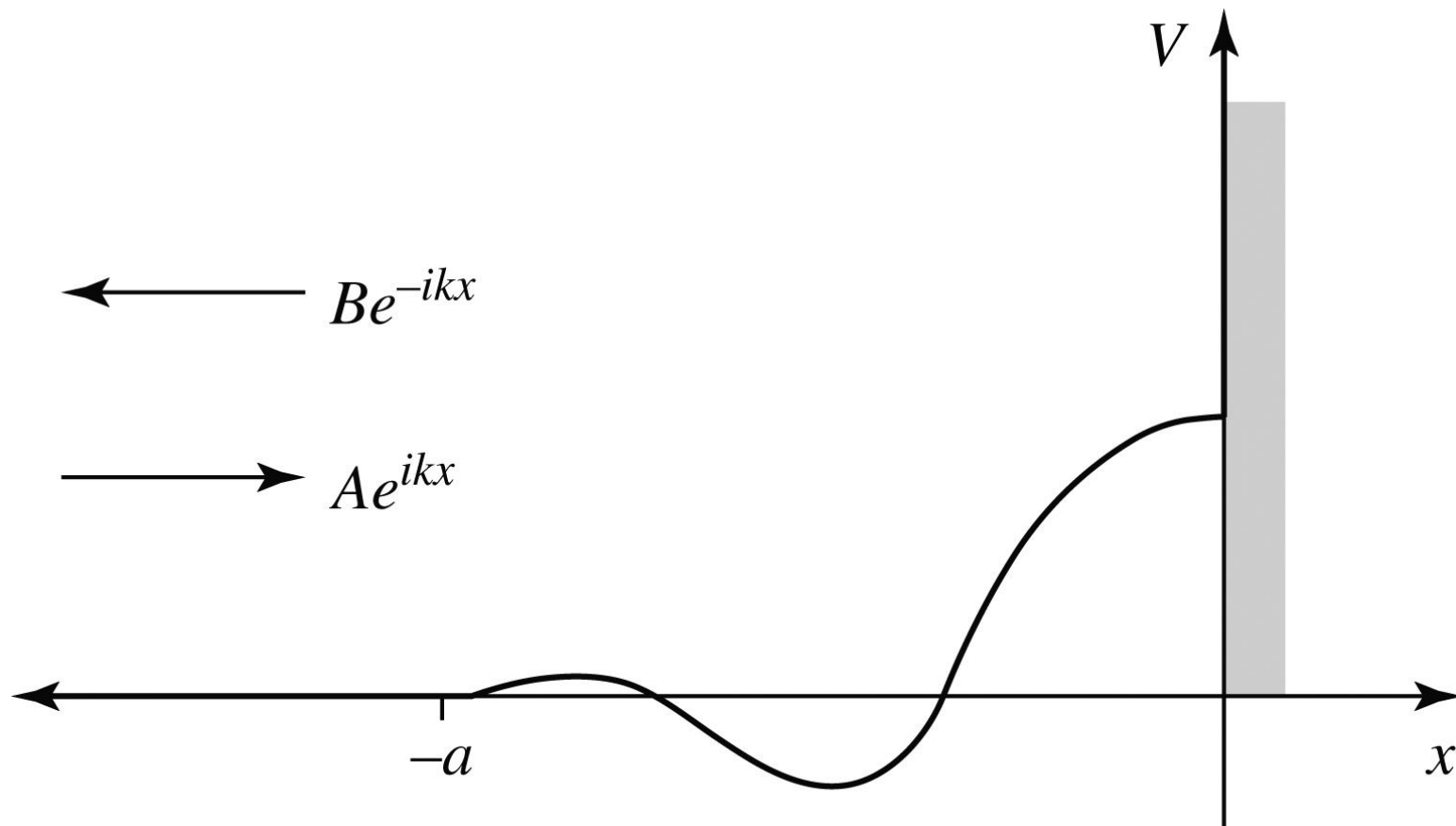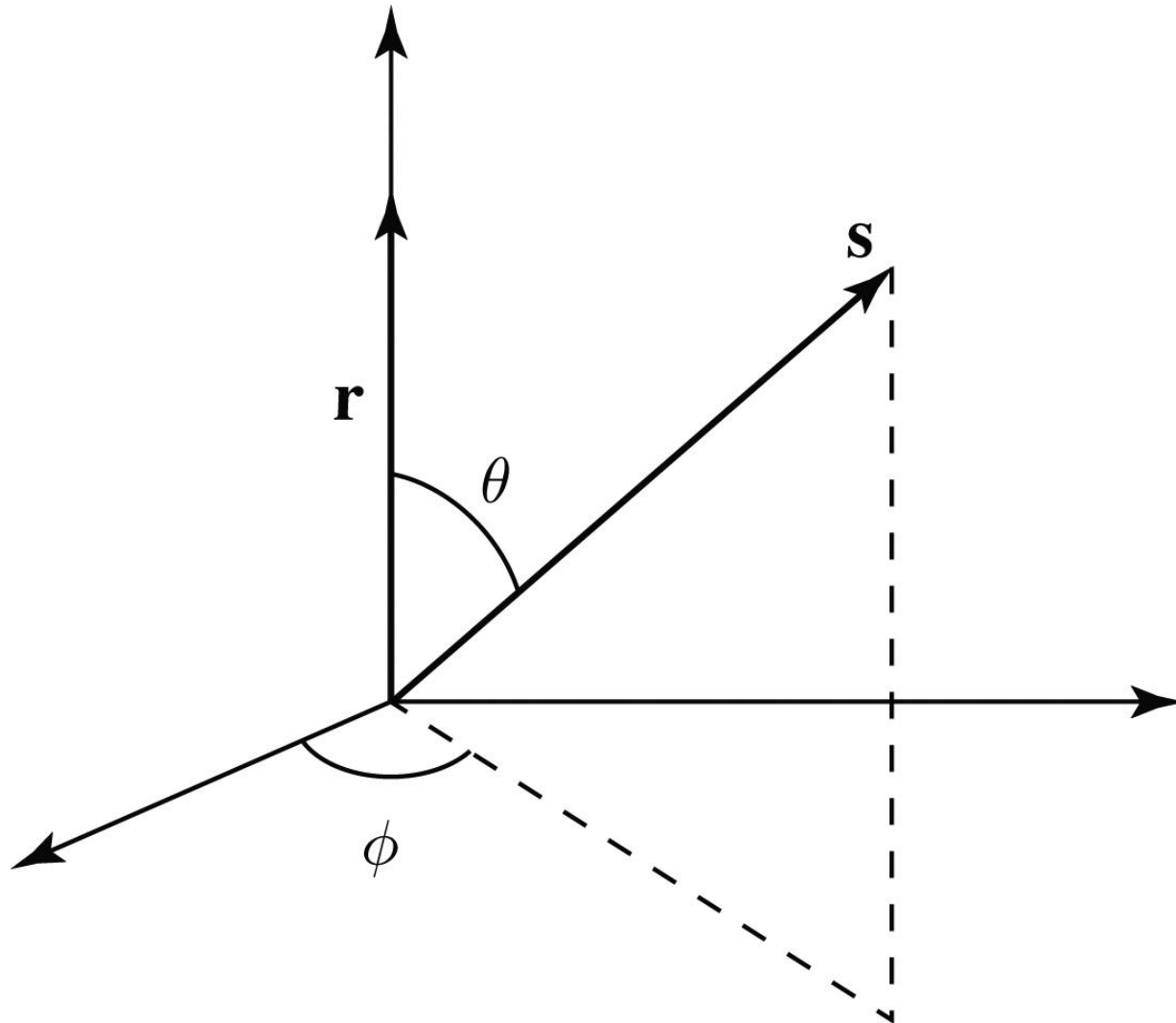$V \neq 0$

Scattering region

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_6

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_7

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_8
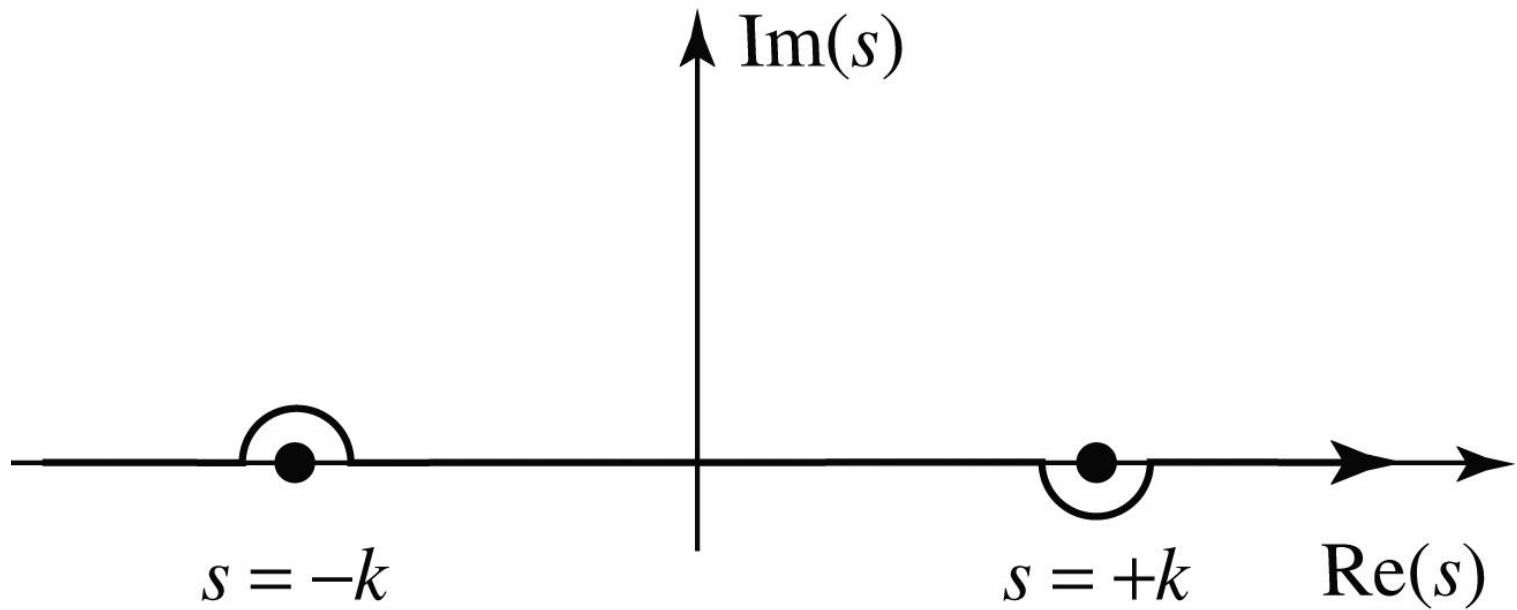
DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_9

(a)

(b)

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_10

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_11

$F_\perp$

Actual
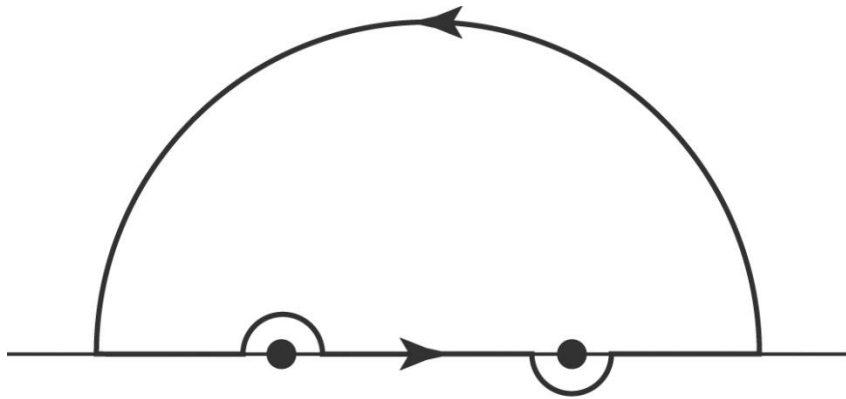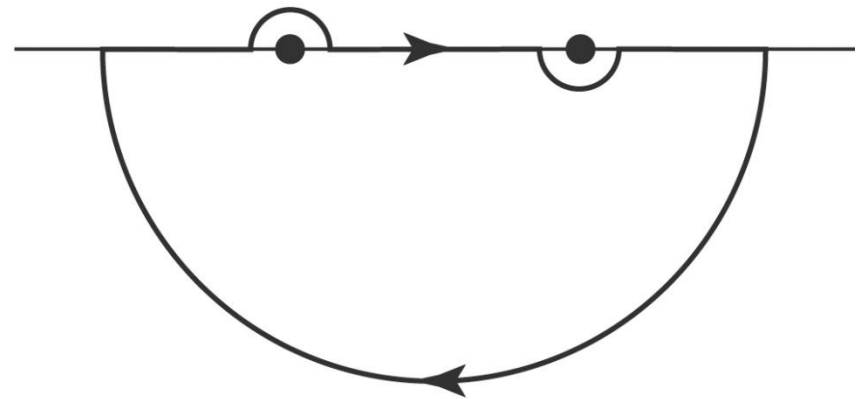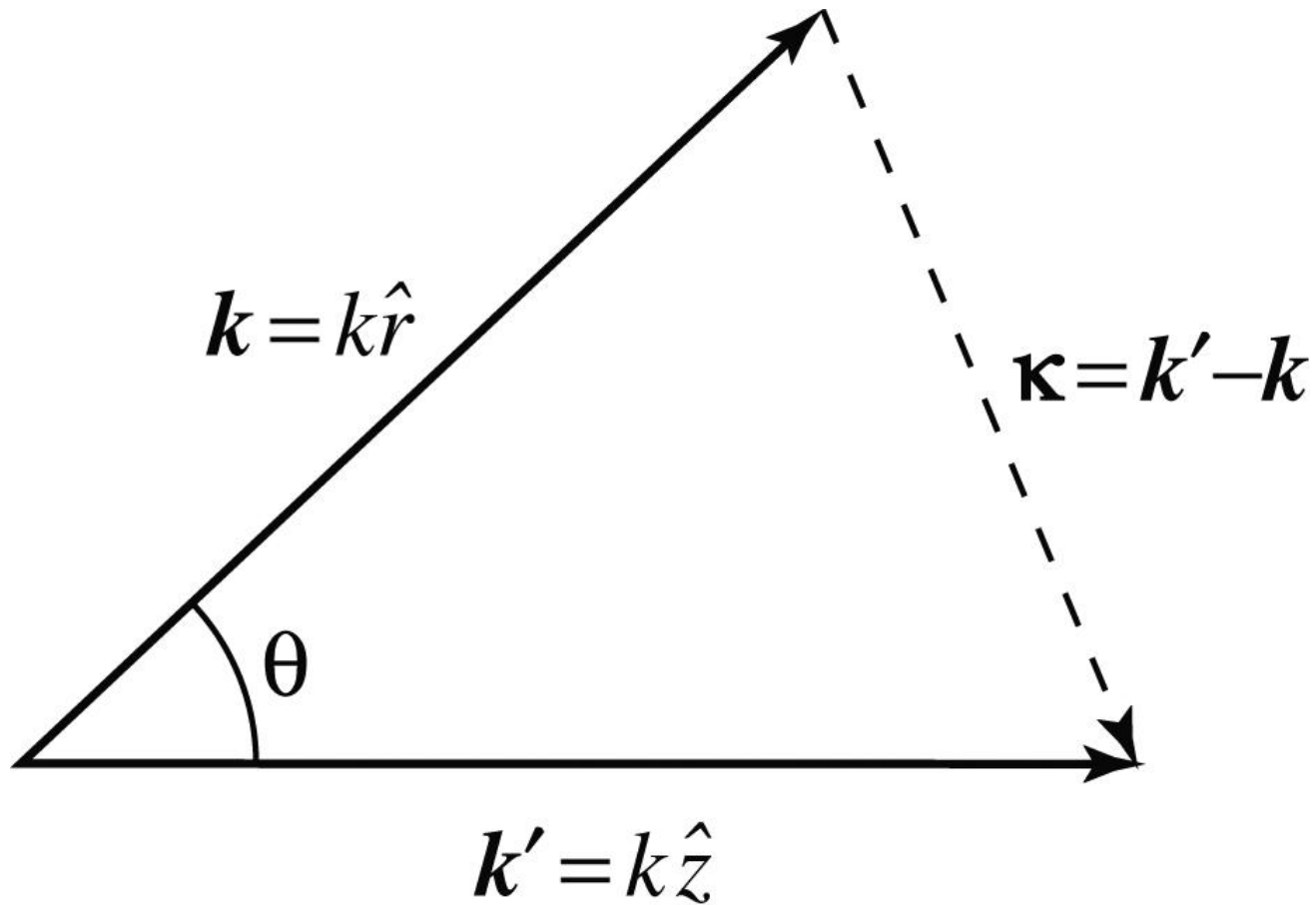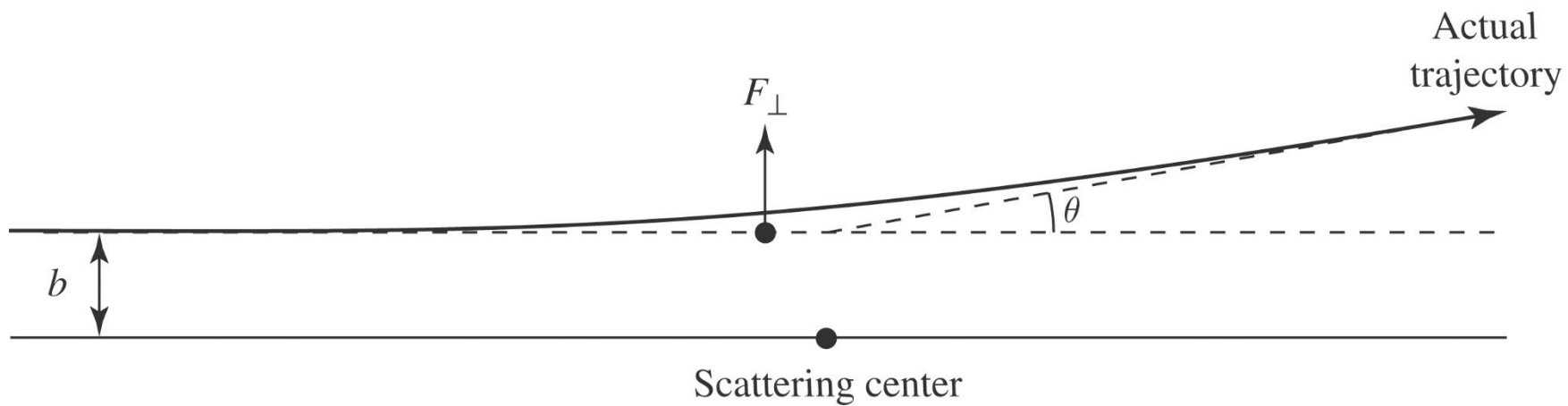trajectory

θ

b

Scattering center
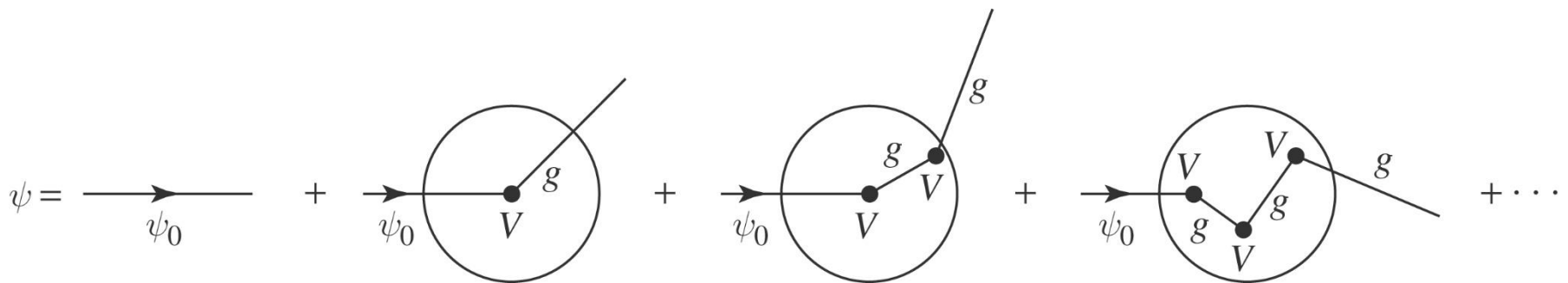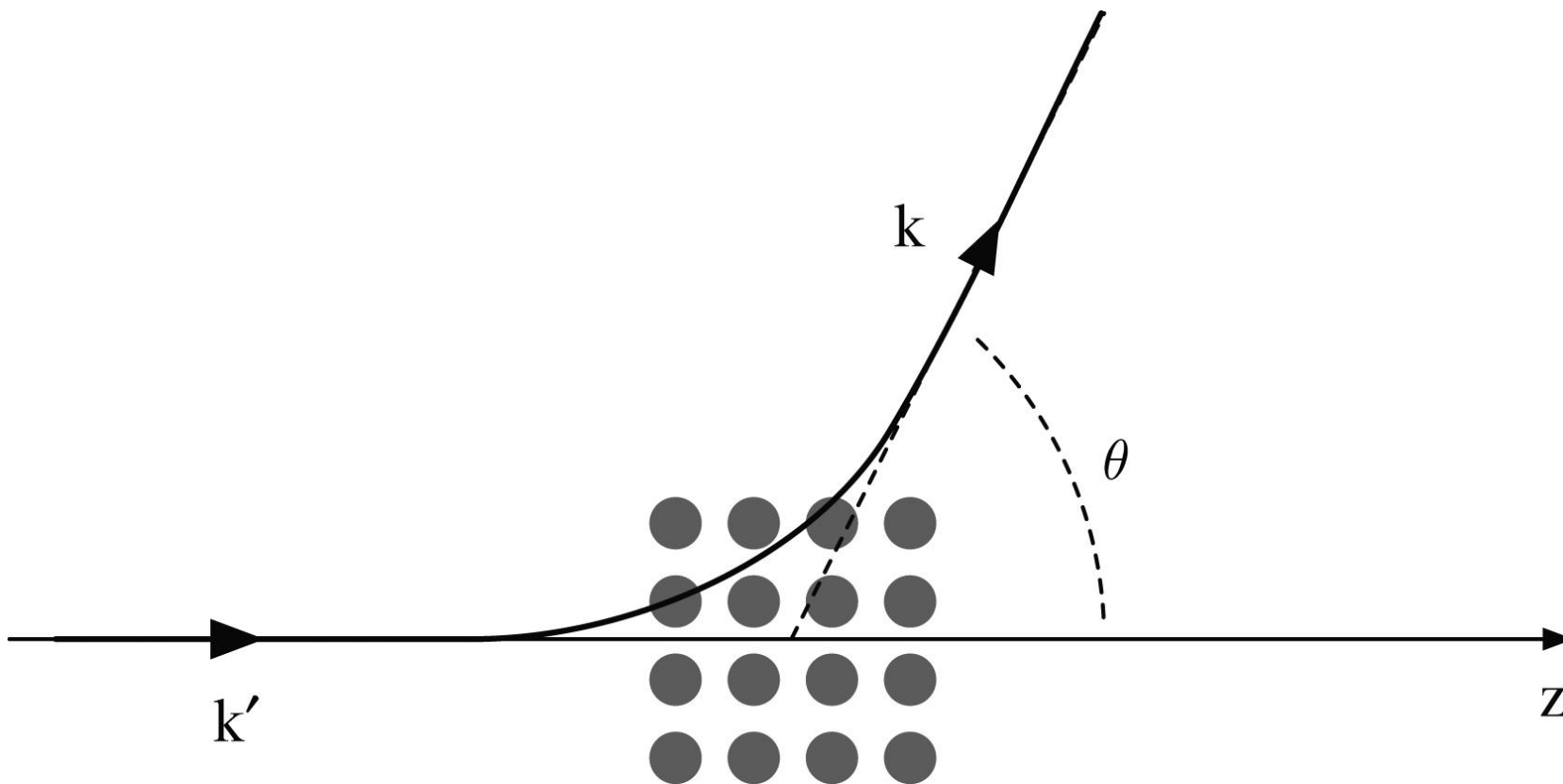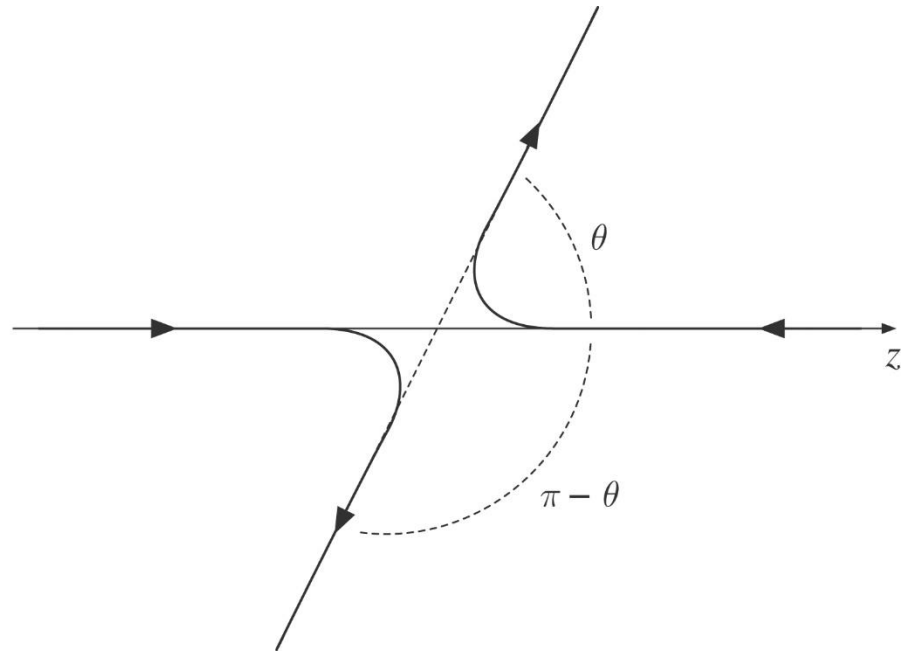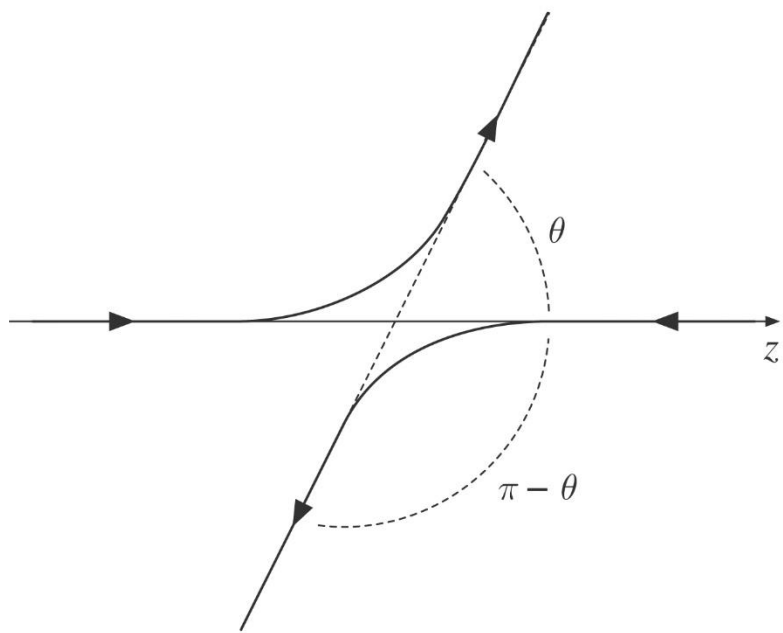
DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_12

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_13

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_14

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_fig. 10_15

$$h_0^{(1)} = -i \frac{e^{ix}}{x}$$

$$h_1^{(1)} = \left(-\frac{i}{x^2} - \frac{1}{x} \right) e^{ix}$$

$$h_2^{(1)} = \left(-\frac{3i}{x^3} - \frac{3}{x^2} + \frac{i}{x} \right) e^{ix}$$

$$h_0^{(2)} = i \frac{e^{-ix}}{x}$$

$$h_1^{(2)} = \left(\frac{i}{x^2} - \frac{1}{x} \right) e^{-ix}$$

$$h_2^{(2)} = \left(\frac{3i}{x^3} - \frac{3}{x^2} - \frac{i}{x} \right) e^{-ix}$$

$$\left. \begin{array}{l} h_\ell^{(1)} \to \dfrac{1}{x} \, (-i)^{\ell+1} e^{ix} \\[2em] h_\ell^{(2)} \to \dfrac{1}{x} \, (i)^{\ell+1} e^{-ix} \end{array} \right\} \text{ for } x \gg 1$$

DAVID J. GRIFFITHS & DARRELL F. SCHROETER_table. 10_1