

Chapter 37 Even Answers

2. 515 nm
4. (a) 36.2° (b) 5.08 cm (c) 508 THz
6. maxima at 0° , 29.1° , and 76.3° ; minima at 14.1° and 46.8°
8. 36.2 cm
10. 641
14. (a) 1.29 rad (b) 99.8 nm
16. 0.987
18. (a) See solution (b) 9.00
20. (a) $2.88 E_0$, 0.349 rad (b) $2.00 E_0$, $\frac{\pi}{3}$ rad
(c) 0 (d) E_0 , $\frac{3\pi}{2}$ rad
24. $x_1 - x_2 = \left(m - \frac{1}{48}\right)\lambda \quad m = 0, 1, 2, 3 \dots$
28. 612 nm
30. 512 nm
32. 96.2 nm
34. (a) 238 nm (b) λ will increase (c) 328 nm
36. 1.31
38. 147 dark fringes
40. 654 dark fringes
42. 449 nm, blue
44. $1 + \frac{N\lambda}{2L}$
46. (a) $\sim 10^{-3}$ degree (b) $\sim 10^{11}$ Hz, microwave
48. $20.0 \times 10^{-6} \text{ }^\circ\text{C}^{-1}$

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50. 2.50 mm

52. 1.62 km

54. 2.52 cm

56. 115 nm

58. (a) See solution (b) 266 nm

60. 8.33 cm

62. 99.8 m

66. 1.73 cm

68. (a) 4.86 cm (b) 78.9 nm and 128 nm (c) 2.63×10^{-6} rad