Chapter 2: More Practice Solutions

1. $i = (2000)(0.04)(4) = 320$, so the total due is \$2,320.
2. $600 = (2000)r(4) \Rightarrow 600 = 8000r \quad r = \frac{600}{8000} = 0.075$ He should charge 7.5%.
3. $56.25 = (500)(0.045)t \Rightarrow 56.25 = 22.5t \Rightarrow t = \frac{56.25}{22.5} = 2.5$. The loan was for 2½ years.
4. \$2,196.52
5. $50\left(1 + \frac{0.015}{12}\right)^{12 \cdot t}$ (Answers vary here, because we're different ages! t = your age – 10.)
6. \$6,227.25
7. \$858 million ($t = 202.5$, since it's 2005 and we're ~6 months after April.)
8. $n + 3$
9. $2n - 5$
10. $t + 0.15t = 1.15t$
11. $10d$
12. $0.25q$
13. $0.06d$
14. $d + 0.06d = 1.06d$
15. $x + y = 10$
16. $l = 2w + 2$
17. $2l + 2w = P \Rightarrow 2l + 2 \cdot 8 = 26 \Rightarrow 2l + 16 = 26$
18. $2l + 2w = P \Rightarrow 2(w - 3) + 2w = 30$
19. $x + 3x = 90$
20. $n + (n + 1) + (n + 2) = 18$
21. $x, 10 - x$
22. $x, 10000 - x$
23. $x, 15 - x$
24. Let m = the number of men. The equation is $m + (13 + m) = 165$.
25. Let x = the length of the shortest piece. The equation is $x + (3x - 6) + (x + 26) = 130$.
26. $24 + 2 \cdot l = 96$
27. In general, *price – discount = sale price*, so $225 - x \cdot 225 = 175.50$, where x = percent discount.
28. Let x = price of the item. The equation is $x + 0.065x = 50 \Rightarrow 1.065x = 50$.
29. Let b = bill before tax. The equation is $b + 0.08b = 91.80 \Rightarrow 1.08b = 91.80$.
30. Let m = the number of minutes for the plans to be equal. The equation is $29.95 = 3.95 + 0.07m$.
31. Let r = the number of daily rides. The equation is $4.90 \cdot r = 132.30$.
32. Let t = time walking. The equation is $3.5t + 4.5t = 2$.
33. Let h = the number of hours worked at the first job. The equation is $7h + 7.75(26 - h) = 190.25$.
34. Sorry, there was a typo – it should have read: Oberweis Dairy has 400 quarts of whole milk containing 5% butterfat. How many quarts of low-fat milk containing 1.5% butterfat should be added to produce **milk** containing 2% butterfat?

    Let x = number of quarts of low-fat milk. The equation is $(400)(0.5) + x \cdot 0.015 = 0.02(400 + x)$.
    This is not an easy question – the equation involved uses *total fat* as its root.