Section 2.5 Subtraction of Real Numbers

Section 2.5 Calculator Exercises

1. –13

3. 711

5. –17. 7

7. –17

Section 2.5 Practice Exercises

1. **(a)** $-b$

(b) positive

3. x^2

5. $-b + 2$

7. $1 + 36 \div 9 \cdot 2 = 1 + 4 \cdot 2 = 1 + 8 = 9$

9. –3

11. –12

13. 4

15. $3 - 5 = 3 + (-5) = -2$

17. $3 - (-5) = 3 + 5 = 8$

19. $-3 - 5 = -3 + (-5) = -8$

21. $-3 - (-5) = -3 + 5 = 2$

23. $23 - 17 = 6$

25. $23 - (-17) = 23 + 17 = 40$

27. $-23 - 17 = -23 + (-17) = -40$

29. $-23 - (-23) = 0$

31. $-6 - 14 = -6 + (-14) = -20$

33. $-7 - 17 = -7 + (-17) = -24$

35. $13 - (-12) = 13 + 12 = 25$

37. $-14 - (-9) = -14 + 9 = -5$

39. $-\frac{6}{5} - \frac{3}{10} = -\frac{12}{10} + \left(-\frac{3}{10}\right) = -\frac{15}{10} = -\frac{3}{2}$

41. $\frac{3}{8} - \left(-\frac{4}{3}\right) = \frac{9}{24} + \frac{32}{24} = \frac{41}{24}$

43. $\frac{1}{2} - \frac{1}{10} = \frac{5}{10} - \frac{1}{10} = \frac{4}{10} = \frac{2}{5}$

45. $-\frac{11}{12} - \left(-\frac{1}{4}\right) = -\frac{11}{12} + \frac{3}{12} = -\frac{8}{12} = -\frac{2}{3}$

47. $6.8 - (-2.4) = 6.8 + 2.4 = 9.2$

49. $3.1 - 8.82 = 3.10 + (-8.82) = -5.72$

51. $-4 - 3 - 2 - 1$

$= -4 + (-3) + (-2) + (-1)$

$= -10$

53. $6-8-2-10=6+(-8)+(-2)+(-10)$
$=-14$

55. $10+(-14)+6-22$
$=10+(-14)+6+(-22)$
$=16+(-36)=-20$

57. $-112.846+(-13.03)-47.312$
$=-173.188$

59. $0.085-(-3.14)+(0.018)=3.243$

61. $6-(-7)$; 13

63. $3-18$; -15

65. $-5-(-11)$; 6

67. $-1-(-13)$; 12

69. $-32-20$; -52

71. $200+400+600+800-1000$; \$1000

73. $113°-(-39°)=152°\text{F}$

75. $8848-(-11{,}033\text{ m})=19{,}881\text{ m}$

77. $6+8-(-2)-4+1=14+2-4+1$
$=16-4+1=13$

79. $-1-7+(-3)-8+10=-8+(-3)-8+10$
$=-9$

81. $2-(-8)+7+3-15=2+8+7+3-15$
$=17+3-15=5$

83. $-6+(-1)+(-8)+(-10)$
$=-7+(-8)+(-10)=-25$

85. $-4-\{11-[4-(-9)]\}=-4-\{11-[4+9]\}$
$=-4-\{11-13\}$
$=-4-(-2)=-2$

87. $-\frac{13}{10}+\frac{8}{15}-\left(-\frac{2}{5}\right)=-\frac{39}{30}+\frac{16}{30}+\frac{12}{30}$
$=-\frac{11}{30}$

89. $\left(\frac{2}{3}-\frac{5}{9}\right)-\left(\frac{4}{3}-(-2)\right)$
$=\left(\frac{6}{9}-\frac{5}{9}\right)-\left(\frac{4}{3}+\frac{6}{3}\right)$
$=\frac{1}{9}-\frac{10}{3}$
$=\frac{1}{9}-\frac{30}{9}=-\frac{29}{9}$

91. $\sqrt{29+(-4)}-7=\sqrt{25}-7=5-7=-2$

93. $\left|10+(-3)\right|-\left|-12+(-6)\right|=\left|7\right|-\left|-18\right|$
$=7-18=-11$

95. $\frac{3-4+5}{4+(-2)}=\frac{4}{2}=2$

97. $(a+b)-c=(-2+(-6))-(-1)$
$=-8+1=-7$

99. $a-(b+c)=-2-(-6+(-1))$
$=-2-(-7)$
$=-2+7=5$

101. $(a-b)-c=(-2-(-6))-(-1)$
$=(4)+1=5$

103. $a-(b-c)=-2-(-6-(-1))$
$=-2-(-5)$
$=-2+5=3$

Problem Recognition Exercises

1. Add their absolute values and apply a negative sign.

3. (a) $14+(-8)=6$

(b) $-14+8=-6$

(c) $-14+(-8)=-22$

(d) $14-(-8)=14+8=22$

(e) $-14-8=-14+(-8)=-22$

5. (a) $-25+25=0$

(b) $25-25=25+(-25)=0$

(c) $25-(-25)=25+25=50$

(d) $-25-(-25)=-25+25=0$

(e) $-25+(-25)=-50$

7. **(a)** $3.5-7.1=3.5+(-7.1)$
$=-3.6$

(b) $3.5-(-7.1)=3.5+7.1$
$=10.6$

(c) $-3.5+7.1=3.6$

(d) $-3.5-(-7.1)=-3.5+7.1$
$=3.6$

(e) $-3.5+(-7.1)=-10.6$

9. **(a)** $-100-90-80=-100+(-90)+(-80)$
$=-270$

(b) $-100-(90-80)=-100-(10)$
$=-100+(-10)$
$=-110$

(c) $-100+(90-80)=-100+(10)$
$=-90$

(d) $-100-(90+80)=-100-(170)$
$=-270$