23. Why does $-5^2 = -25$, not 25? Is $(-5)^2$ positive or negative? What about $-(-5)^2$? Explain your answers.

Evaluate each expression. See Example 3.

24. $8^2 - (-4) + 11$

25. $6(-9) - 4$

26. $-2 \cdot 5 + 12 \div 3$

27. $9 \cdot 3 - 16 \div 4$

28. $-4(9 - 8) + (-7)(2)^3$

29. $6(-5) - (-3)(2)^4$

30. $-(-5)^3 - (-5)^2$

31. $(4 - 2^3)(-2 + \sqrt{25})$

32. $[-3^2 - (-2)][\sqrt{16} - 2^3]$

33. $\left(-\frac{2}{9} - \frac{1}{4}\right) - \left[-\frac{5}{18} - \left(-\frac{1}{2}\right)\right]$

34. $\left[-\frac{5}{8} - \left(-\frac{2}{5}\right)\right] \div \left(\frac{3}{2} - \frac{11}{10}\right)$

35. $\dfrac{8 + (-4)(-6) \div 12}{4 - (-3)}$

36. $\dfrac{15 \div 5 \cdot 4 \div 6 - 8}{-6 - (-5) - 8 \div 2}$

Evaluate each expression if $p = -4$, $q = 8$, and $r = -10$. See Example 4.

37. $2(q - r)$

38. $\frac{p}{q} + \frac{3}{r}$

39. $2p - 7q + r^2$

40. $-p^3 - 2q + r$

41. $\dfrac{q + r}{q + p}$

42. $\dfrac{3q}{3p - 2r}$

43. $\frac{3q}{r} - \frac{5}{p}$

44. $\dfrac{\frac{q}{4} - \frac{r}{5}}{\frac{p}{2} + \frac{q}{2}}$

45. $\dfrac{(p + 2)^2 - 3r}{2 - q}$

46. $\dfrac{5q + 2(1 + p)^3}{r + 3}$

Passing Rating for NFL Quarterbacks *Use the formula*

$$\text{Passing Rating} \approx 85.68\left(\frac{C}{A}\right) + 4.31\left(\frac{Y}{A}\right) + 326.42\left(\frac{T}{A}\right) - 419.07\left(\frac{I}{A}\right),$$

where A = number of passes attempted, C = number of passes completed, Y = total number of yards gained passing, T = number of touchdown passes, and I = number of interceptions, to approximate the passing rating for each NFL quarterback. (The formula is exact to one decimal place in Exercises 47–49 and in Exercise 50 differs by only .1.) See Example 5. (Source: www.NFL.com*)*

NFL Quarterback/Team	A	C	Y	T	I
47. Brad Johnson/Buccaneers	451	281	3049	22	6
48. Trent Green/Chiefs	470	287	3690	26	13
49. Drew Bledsoe/Bills	610	375	4359	24	15
50. Peyton Manning/Colts	591	392	4200	27	19

Blood Alcohol Concentration *The Blood Alcohol Concentration (BAC) of a person who has been drinking is given by the expression*

$$\text{number of oz} \times \%\text{ alcohol} \times .075 \div \text{body weight in lb} - \text{hr of drinking} \times .015.$$

(Source: Lawlor, J., *Auto Math Handbook: Mathematical Calculations, Theory, and Formulas for Automotive Enthusiasts,* HP Books, 1991.)

51. Suppose a policeman stops a 190-lb man who, in 2 hr, has ingested four 12-oz beers (48 oz), each having a 3.2% alcohol content. Calculate the man's BAC to the nearest thousandth. Follow the order of operations.