

pg. 13-14 # 21, 23, 31, 33, 35, 37, 39, 41, 44, 45, 47,  
49, 51, 55

$$\begin{aligned} 21. & 80 - (4-1)^3 \\ & = 80 - (3)^3 \\ & = 80 - 27 \\ & = 53 \end{aligned}$$

$$\begin{aligned} 23. & \frac{6^4 \div 3^2}{9} \\ & = \frac{1296 \div 9}{9} \\ & = \frac{144}{9} \\ & = \boxed{16} \end{aligned}$$

$$\begin{aligned} 31. & 2st^2 - s^2 \\ & 2(4)(8)^2 - (4)^2 \\ & 2(4)(64) - (16) \\ & 8(64) - 16 \\ & 512 - 16 \\ & = 496 \end{aligned}$$

$$\begin{aligned} 33. & \frac{(3s)^3 t + t}{s} = \frac{(3(4))^3 (8) + (8)}{4} \\ & = \frac{(12)^3 (8) + (8)}{4} \\ & = \frac{1728(8) + 8}{4} \\ & = \frac{13824 + 8}{4} \\ & = \frac{13832}{4} \\ & = \boxed{3458} \end{aligned}$$

35.  $m = \text{mass}$

$v = \text{velocity}$

$m \cdot v$

mass	velocity	$m \cdot v$	momentum
1000	15	1000(15)	15,000
1000	20	1000(20)	20,000
1000	25	1000(25)	25,000



$$\begin{aligned}
 37. \quad & 2[(8-4)^5 \div 8] \\
 & 2[(4)^5 \div 8] \\
 & 2[1024 \div 8] \\
 & 2[128] \\
 & = 256
 \end{aligned}$$

$$\begin{aligned}
 39. \quad & 10 - (2^3 + 4) \div 3 - 1 \\
 & 10 - (8 + 4) \div 3 - 1 \\
 & 10 - (12) \div 3 - 1 \\
 & 10 - 4 - 1 \\
 & 6 - 1 \\
 & = 5
 \end{aligned}$$

$$\begin{aligned}
 41. \quad & 3[42 - 2(10^2 - 9^2)] \\
 & 3[42 - 2(100 - 81)] \\
 & 3[42 - 2(19)] \\
 & 3[42 - 38] \\
 & 3[4] \\
 & = 12
 \end{aligned}$$

44. 10 h      h = hours

hours	10h	Total Earned
10	10(10)	\$100
20	10(20)	\$200
30	10(30)	\$300
40	10(40)	\$400

$$\begin{aligned}
 45. \quad & 3(s-t)^2; s=4, t=1 \\
 & 3((4)-(1))^2 \\
 & 3(3)^2 \\
 & 3(9) \\
 & = 27
 \end{aligned}$$

$$\begin{aligned}
 47. \quad & 3m^2 - n; m=2, n=6 \\
 & 3(2)^2 - (6) \\
 & 3(4) - 6 \\
 & 12 - 6 \\
 & = 6
 \end{aligned}$$

$$\begin{aligned}
 49. \quad & 2p^2 + (2q)^2; p=4, q=3 \\
 & 2(4)^2 + (2(3))^2 \\
 & 2(4)^2 + (6)^2 \\
 & 2(16) + 36 \\
 & 32 + 36 \\
 & = 68
 \end{aligned}$$

$$\begin{aligned}
 51. \quad & \frac{3g+6}{h}; g=5, h=7 \\
 & \frac{3(5)+6}{7} \\
 & = \frac{15+6}{7} = \frac{21}{7} = 3
 \end{aligned}$$

$$55 \quad 14 + 5 \cdot 3 - 3^2$$

$$14 + 5 \cdot 3 - 9$$

$$14 + 15 - 9$$

$$29 - 9$$

$$= 20$$

$$; \quad 14 - 5 \cdot 3 + 3^2$$

$$14 - 5 \cdot 3 + 9$$

$$14 - 15 + 9$$

$$-1 + 9$$

$$= \boxed{8}$$