59. First, round \$69.95 to \$70..
Think: 8% = 8(1%)
1% of \$70 = \$0.70
8% = 8(1%)
= 8(0.70) = \$5.60
The tax will be about \$5.60.

LESSON 2-10, PAGE 155

60. percent change $= \frac{\text{amount of increase}}{\text{original amount}}$
$= \frac{26 - 19}{19}$
$= \frac{7}{19}$
≈ 0.37
$\approx$ 37% increase

61. percent change $= \frac{\text{amount of decrease}}{\text{original amount}}$
$= \frac{42 - 28}{42}$
$= \frac{14}{42}$
$= \frac{1}{3}$
≈ 0.33
$\approx$ 33% decrease

62. 100% + 40% = 140%
1.40(65) = 91

63. 100% − 15% = 85%
0.85(150) = 127.5

64. 1.50(2.50) = 3.75
2.5 + 3.75 = 6.25
The amount of the markup is \$3.75. The selling price is \$6.25.

65. percent change $= \frac{\text{amount of decrease}}{\text{original amount}}$
$= \frac{79.99 - 49.99}{79.99}$
$= \frac{30}{79.99}$
≈ 0.375
$\approx$ 37.5%

CHAPTER TEST, PAGE 156

1. $y - 7 = 2$
$+7 \quad +7$
$y = 9$

2. $x + 12 = 19$
$-12 \quad -12$
$x = 7$

3. $-5 + z = 8$
$+5 \quad +5$
$z = 13$

4. $9x = 72$
$\frac{9x}{9} = \frac{72}{9}$
$x = 8$

5. $\frac{m}{-8} = -2.5$
$(-8)\left(\frac{m}{-8}\right) = (-8)(-2.5)$
$m = 20$

6. $\frac{7}{8}a = 42$
$\left(\frac{8}{7}\right)\frac{7}{8}a = \left(\frac{8}{7}\right)42$
$a = 48$

7. $15 = 3 - 4x$
$-3 \quad -3$
$12 = -4x$
$\frac{12}{-4} = \frac{-4x}{-4}$
$-3 = x$

8. $\frac{2a}{3} + \frac{1}{5} = \frac{7}{6}$
$30\left(\frac{2}{3}a + \frac{1}{5}\right) = 30\left(\frac{7}{6}\right)$
$20a + 6 = 35$
$-6 \quad -6$
$20a = 29$
$\frac{20a}{20} = \frac{29}{20}$
$a = 1.45$

9. $8 - (b - 2) = 11$
$8 - b + 2 = 11$
$10 - b = 11$
$-10 \quad -10$
$-b = 1$
$(-1)(-b) = (-1)(1)$
$b = -1$

10. $-2x + 4 = 5 - 3x$
$+3x \quad +3x$
$x + 4 = 5$
$-4 \quad -4$
$x = 1$

11. $3(q - 2) + 2 = 5q - 7 - 2q$
$3q - 6 + 2 = 5q - 7 - 2q$
$3q - 4 = 3q - 7$
$-3q \quad -3q$
$-4 = -7$ ✗
no solution

12. $5z = -3(z + 7)$
$5z = -3z - 21$
$+3z \quad +3z$
$8z = -21$
$\frac{8z}{8} = \frac{-21}{8}$
$z = -2.625$

13. $r - 2s = 14$
$-r \quad -r$
$-2s = 14 - r$
$\frac{-2s}{-2} = \frac{14 - r}{-2}$
$s = \frac{r - 14}{2}$

14. $V = \frac{1}{3}bh$
$V = \frac{h}{3}b$
$\left(\frac{3}{h}\right)V = \left(\frac{3}{h}\right)\frac{h}{3}b$
$\frac{3V}{h} = b$

15. $P = 2(\ell + w)$
$\frac{P}{2} = \frac{2(\ell + w)}{2}$
$\frac{P}{2} = \ell + w$
$-w \quad -w$
$\frac{P}{2} - w = \ell$

16. Let b represent the number of blue marbles.
$\frac{4}{7} = \frac{16}{b}$
$4b = 112$
$\frac{4b}{4} = \frac{112}{4}$
$b = 28$
There are 28 blue marbles in the bag.

17. $\frac{4.99}{3} \approx$ \$1.66/videotape

18. $\frac{120}{25} = 4.8$ sheets/student

19. $\frac{5}{4} = \frac{x}{12}$
$60 = 4x$
$\frac{60}{4} = \frac{4x}{4}$
$15 = x$

20. $\frac{8}{2z} = \frac{15}{60}$
$480 = 30z$
$\frac{480}{30} = \frac{30z}{30}$
$16 = z$

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21. $\frac{x+10}{10} = \frac{18}{12}$

$12(x+10) = 18(10)$

$12x + 120 = 180$

$-120 \quad -120$

$12x = 60$

$\frac{12x}{12} = \frac{60}{12}$

$x = 5$

22. Let d represent the distance between the two cities on the map in inches.

$\frac{1}{500} = \frac{d}{875}$

$875 = 500d$

$\frac{875}{500} = \frac{500d}{500}$

$1.75 = d$

The cities are 1.75 in. apart on the map.

23. $\frac{EF}{RS} = \frac{EG}{RT}$

$\frac{6}{20} = \frac{5}{x}$

$6x = 100$

$\frac{6x}{6} = \frac{100}{6}$

$x \approx 16.7$ in.

24. $\frac{HJ}{WX} = \frac{LK}{ZY}$

$\frac{3.84}{3.2} = \frac{2.04}{x}$

$3.84x = 6.528$

$\frac{3.84x}{3.84} = \frac{6.528}{3.84}$

$x = 1.7$ m

25. $x = 23\%$ of 46

$x = 0.23(46)$

$x = 10.58$

26. $37.5 = 60\%$ of x

$37.5 = 0.60x$

$\frac{37.5}{0.60} = \frac{0.60x}{0.60}$

$62.5 = x$

27. $35 = 175x$

$\frac{35}{175} = \frac{175x}{175}$

$\frac{1}{5} = x$

$0.20 = x$

$20\% = x$

28. $I = Prt$

$I = (2000)(0.032)(5)$

$I = \$320$

29. First round \$27.95 to \$30.

Think: $15\% = 10\% + 5\%$

10% of $\$30 = \$3.00$

Think: $5\% = 10\% \div 2$

$= \$3.00 \div 2 = \$1.50$

$15\% = 10\% + 5\%$

$= \$3.00 + \$1.50 = \$4.50$

The tip would be about \$4.50

30. percent change $= \frac{\text{amount of increase}}{\text{original amount}}$

$= \frac{234 - 180}{180}$

$= \frac{54}{180}$

$= \frac{3}{10}$

$= 0.30$

$= 30\%$ increase

31. percent change $= \frac{\text{amount of increase}}{\text{original amount}}$

$= \frac{48 - 12}{12}$

$= \frac{36}{12}$

$= 3$

$= 300\%$ increase

32. percent change $= \frac{\text{amount of decrease}}{\text{original amount}}$

$= \frac{56 - 21}{56}$

$= \frac{35}{56}$

$= \frac{5}{8}$

$= 0.625$

$= 62.5\%$ decrease

COLLEGE ENTRANCE EXAM PRACTICE, PAGE 157

1. E

Let r represent the number of right-handed players.

So, the number of left-handed players is $20 - r$.

$\frac{1}{4} = \frac{20 - r}{r}$

$r = 80 - 4r$

$+4r \quad +4r$

$5r = 80$

$\frac{5r}{5} = \frac{80}{5}$

$r = 16$

There are 16 right-handed players.

2. F

$y - 3 = \frac{2}{5}(x + 1)$

$\left(\frac{5}{2}\right)(y - 3) = \left(\frac{5}{2}\right)\frac{2}{5}(x + 1)$

$\frac{5(y-3)}{2} = x + 1$

$-1 \quad -1$

$\frac{5(y-3)}{2} - 1 = x$

$\frac{5(y-3) - 2}{2} = x$

3. B

$x = \frac{1}{5}\%$ of 20

$x = 0.20\%$ of 20

$x = 0.0020(20)$

$x = 0.04$

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