

Diagnostic Pretest



Study Skills Workbook

Activity 1: Your Brain

[Chapter 1]

1. Use digits to write eighty-nine million, twenty-three thousand, five hundred seven.
2. Subtract.
$$\begin{array}{r} 7009 \\ - 2678 \\ \hline \end{array}$$
3. Divide. $20,213 \div 29$
4. Round 89,658 to the nearest thousand.

[Chapter 2]

5. Write $\frac{235}{8}$ as a mixed number.
6. Write the prime factorization of 392 using exponents.
7. A cake recipe calls for $2\frac{1}{4}$ cups of flour. How much flour is needed to make 5 cakes?
- \approx 8. First estimate the answer. Then find the exact answer. Write the exact answer as a mixed number.

$$5\frac{3}{4} \cdot 2\frac{1}{8}$$

[Chapter 3]

9. Find the least common multiple of 5, 8, 12, and 30.
10. Solve. Write your answer in lowest terms.
- \approx 11. First estimate the answer. Then find the exact answer. Write the exact answer as a mixed number.

$$8\frac{2}{9} + 12\frac{5}{6}$$

12. Use the order of operations to simplify.

$$\left(\frac{3}{4}\right)^2 + \left(\frac{5}{6} - \frac{2}{3}\right)$$

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. *Estimate:* _____

Exact: _____

9. _____

10. _____

11. *Estimate:* _____

Exact: _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

[Chapter 4]

13. Round \$1.3852 to the nearest cent.

14. Write $6\frac{5}{9}$ as a decimal. Round to the nearest thousandth if necessary.

15. Use the order of operations to simplify.

$$4.5^2 - 3.2 + 0.6(12)$$

16. Find the cost (to the nearest cent) of 5.3 pounds of chicken at \$1.59 per pound.

[Chapter 5]

17. Write the ratio “50 minutes to 4 hours” as a fraction in lowest terms. Change to the same units if necessary.

18. Determine whether the proportion is true or false.

$$\frac{16.2}{23.6} = \frac{5.4}{8}$$

19. Find the unknown number in the proportion. Write your answer as a mixed number.

$$\frac{2\frac{1}{2}}{x} = \frac{\frac{3}{4}}{8}$$

20. Martha earns \$59.50 in 7 hours. How much will she earn in 40 hours?

[Chapter 6]*Write each number as a percent.*

21. 0.582

22. $8\frac{3}{4}$

23. The price of a cell phone is \$128 plus 6% sales tax. Find the total cost of the phone including sales tax.

24. Roberto’s annual salary was \$24,500. After his first year on the job, he received a raise to \$26,215. Find the percent of increase.

[Chapter 7]

Convert each measurement.

25. (a) 36 quarts to gallons

(b) $4\frac{3}{4}$ pounds to ounces

26. (a) 0.675 meter to centimeters

(b) 4528 grams to kilograms

27. Jonathan weighed 3 kg 170 g at birth. When he was 5 months old, he weighed 6 kg 90 g. How much weight had he gained, in kilograms?

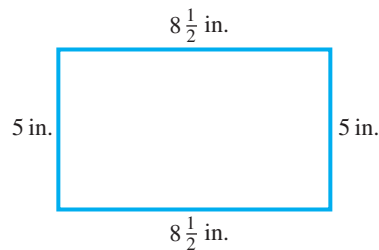
28. Write the most reasonable metric unit in each blank. Choose from km, m, cm, mm, L, mL, kg, g, and mg.

(a) Leanne took a 325 _____ pill for her headache.

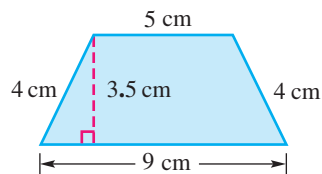
(b) The cover of this textbook is about 21 _____ wide.

[Chapter 8]

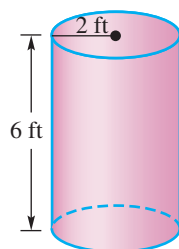
29. Find the perimeter.



30. Find the area.



31. Find the volume. Use 3.14 as the approximate value for π .



25. (a) _____

(b) _____

26. (a) _____

(b) _____

27. _____

28. (a) _____

(b) _____

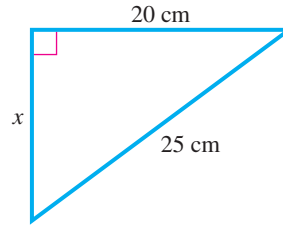
29. _____

30. _____

31. _____

32. _____

32. Find the unknown length.



33. _____

[Chapter 9]

33. Simplify. $12 - (-13)$

34. _____

34. Simplify. $(-0.4)(11.5)$

35. _____

35. Find the value of $7p - 8q$ if $p = -3$ and $q = -4$.

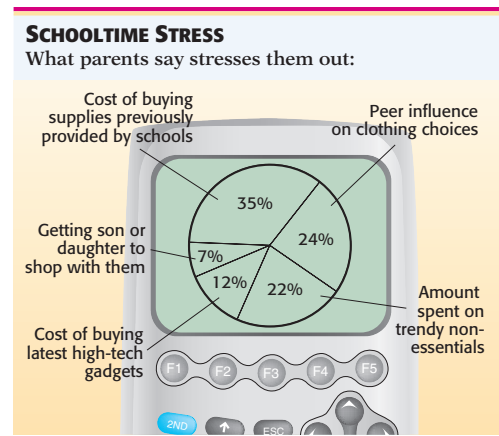
36. _____

36. Solve. $8r + 9 = 2r - 3$

37. _____

[Chapter 10]

37. The circle graph to the right shows what parents say stresses them out the most about the beginning of a new school year. If the total number of parents in the survey was 6800, how many said “peer influence on clothing choices” was most stressful?



Source: Cool Savings.

38. _____

38. Find the mean age of these members of an extended family. Round your answer to the nearest tenth, if necessary.

- 15, 52, 16, 51, 29, 55, 26, 85, 29, 55

39. _____

39. Find the weighted mean.

Round your answer to the nearest tenth, if necessary.

| Quiz Score | Frequency |
|------------|-----------|
| 10 | 3 |
| 9 | 8 |
| 8 | 10 |
| 7 | 9 |
| 6 | 4 |
| 5 | 1 |

40. _____

40. Find the median for these hourly wages:

- \$7.50, \$6.25, \$9.80, \$8.10, \$13.75, \$11.00

Answers to Diagnostic Pretest

In this section we provide the answers that we think most students will obtain when they work the exercises using the methods explained in the text. If your answer does not look exactly like the one given here, it is not necessarily wrong. In many cases there are equivalent forms of the answer that are correct. For example, if the answer section shows $\frac{3}{4}$ and your answer is 0.75, you have obtained the right answer but written it in a different (yet equivalent) form. Unless the directions specify otherwise, 0.75 is just as valid an answer as $\frac{3}{4}$.

In general, if your answer does not agree with the one given in the text, see whether it can be transformed into the other form. If it can, then it is the correct answer. If you still have doubts, talk with your instructor.

DIAGNOSTIC PRETEST

- 89,023,507
- 4331
- 697
- 90,000
- $29\frac{3}{8}$
- $2^3 \cdot 7^2$
- $11\frac{1}{4}$ cups
- Estimate:* $6 \cdot 2 = 12$;
Exact: $12\frac{7}{32}$
- 120
- $\frac{5}{6}$
- Estimate:* $8 + 13 = 21$;
Exact: $21\frac{1}{18}$
- $\frac{35}{48}$
- \$1.39
- 6.556 (rounded)
- 24.25
- \$8.43 (rounded)
- $\frac{5}{24}$
- false
- $26\frac{2}{3}$
- \$340
- 58.2%
- 875%
- \$135.68
- 7%
- (a) 9 gal (b) 76 oz
- (a) 67.5 cm (b) 4.528 kg
- 2.92 kg
- (a) mg (b) cm
- 27 in.
- 24.5 cm²
- 75.36 ft³
- 15 cm
- 25
- 4.6
- 11
- $r = -2$
- 1632 parents
- 41.3 years
- 7.8 (rounded)
- \$8.95