Chapter 11: Diagnostic Test

Name _____

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The purpose of this test is to see how well you understand the basic ideas of beginning algebra. We recommend that you work this diagnostic test *before* your instructor tests you on this chapter. Allow yourself about 40 minutes to do this test.

Complete solutions for all the problems on this test, together with section references, are given in the Answer Section. You should study the sections referred to for the problems you do incorrectly.

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1. Add the following signed numbers:

(a) 7 and -3 (1a) _____

(b) -10 and -6 (1b) _____

(c) -22 and 17 (1c) _____

(d) 25 and 16 (1d) _____

(e) $\begin{array}{r} -16 \\ \underline{-35} \end{array}$ (1e) _____

(f) $\begin{array}{r} 31 \\ \underline{-47} \end{array}$ (1f) _____

(g) $\begin{array}{r} 73 \\ \underline{18} \end{array}$ (1g) _____

(h) $\begin{array}{r} -59 \\ \underline{84} \end{array}$ (1h) _____

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2. Subtract the lower number from the upper number.

(a) $\begin{array}{r} 57 \\ \underline{-32} \end{array}$ (b) $\begin{array}{r} -14 \\ \underline{-22} \end{array}$ (2a) _____

(2b) _____

(c) $\begin{array}{r} -93 \\ \underline{27} \end{array}$ (d) $\begin{array}{r} 138 \\ \underline{481} \end{array}$ (2c) _____

(2d) _____

3. Find the following products.

(a) $5(-9)$ (3a)_____

(b) $(-6)(-7)$ (3b)_____

(c) $(-4)(12)$ (3c)_____

(d) $(8)(9)$ (3d)_____

(e) $(18)(-2)(-5)$ (3e)_____

(f) $(-5)(7)(-2)(-4)$ (3f)_____

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4. Find the following quotients.

(a) $(126) \div (9)$ (4a)_____

(b) $(39) \div (-13)$ (4b)_____

(c) $(-64) \div (-16)$ (4c)_____

(d) $\frac{-75}{15}$ (4d)_____

(e) $\frac{84}{-12}$ (4e)_____

(f) $\frac{-144}{-9}$ (4f)_____

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5. Find the value of $3x + 5y$ when $x = -10$ and $y = 6$.

(5)_____

6. If $A = \frac{1}{2}bh$, find A when $b = 7$ and $h = 18$.

(6)_____

7. If $A = P(1 + rt)$, find A when $P = 600$, $r = 0.07$, and $t = 1.5$.

(7)_____

8. If $C = \frac{5}{9}(F - 32)$, find C when $F = 77$.

(8) _____

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9. Solve the following equations.

(a) $x - 3 = 7$ (9a) _____

(b) $5x + 8 = -22$ (9b) _____

(c) $\frac{x}{6} = -2$ (9c) _____

(d) $3 = \frac{3x}{7} + 15$ (9d) _____

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10. Check to see if $x = \frac{3}{5}$ is a solution of the equation $7 + 5x = 12$.

(10) _____