Part II: Readiness Test for Saxon's *Algebra 2*

The purpose of this section is to determine readiness for Saxon's *Algebra 2* textbook. Answering 8 or more problems correctly indicates readiness for Saxon's *Algebra 2* textbook.

1. Evaluate $x^2y - y^3 + x^{1/2}$ if $x = 3$ and $y = 4$.

2. Simplify:

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

3. Simplify and write the answer with all variables in the numerator.

$$\frac{\left(xm^{-1}\right)^{-3} x^2 m^2}{\left(x^0 y^2\right)^{-2} xy}$$

4. Solve for *x:*

$$3\left(\frac{5}{6} - \frac{5}{3}x\right) = -\left(-\frac{1}{2} + x\right)$$

5. The total value of the pennies and nickels was $14.50. Hala counted the coins and found there were 450 coins in all. How many of each type of coin did she have?

6. Graph $y = 3x + 5$. Determine the slope of the line and its *y*-intercept.

7. (a) Find the perimeter of the figure shown on the left below. Dimensions are in meters. (b) Find the area of the figure. (c) The figure shown is the base of a geometric solid whose sides are perpendicular to the base and whose height is 12 meters. A depiction of the solid is shown on the right. Find its volume. Leave π as π.
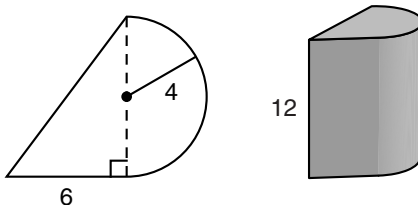
8. The scores that Frank achieved on his five tests were 90, 70, 70, 85, and 95. Find the range, mean, median, and mode of the five test scores.

9. Twice a number is decreased by 7, and this quantity is multiplied by 3. The result is 9 less than 10 times the number. What is the number?

10. Solve by factoring: $x^2 - 15 = 2x$