Unless instructed otherwise, solve for the variable indicated.

1. \( ax = b \)
2. \( ax + b = c \)
3. \( ax^2 = b \)  
   \( \text{Accept } \sqrt{\ldots} \text{ without } \pm \)
4. \( \frac{x}{a} = b \)
5. \( \frac{1}{x} = \frac{1}{a} - \frac{1}{b} \)

6. Simplify completely \( \frac{2a + b}{a + b} - \frac{1}{1 - \frac{b}{a + b}} \)

7. Solve \( 2x^2 - 5x + 5 = 2 \) using the quadratic equation.
   \( x = \frac{3}{2}, 1 \)

8. Factor \( 2a^2R - 2a^2r^2 \) and then evaluate when \( a=7, R=4, \text{ and } r=2 \).
   \( 0 \)

9. What is the circumference of a circle of radius \( r \)?
   \( 2\pi r \)

10. What is the area of a circle of radius \( r \)?
    \( \pi r^2 \)
Questions 11 through 13 use the right triangle shown below.

13. If the angle $\phi$ is $37^\circ$ and the length of side A is 2 meters, what is the length of side C? Note: do not use these numbers in problems 11 & 12.

$\sin 37^\circ = 3/5 = 0.60$, $\cos 37^\circ = 4/5 = 0.80$, $\tan 37^\circ = 3/4 = 0.75$

14. Write the number 0.0040 using scientific notation.

15. Simplify $\frac{6000 \times (4.0 \times 10^{-2})}{0.012}$ and write the result using scientific notation.

16. Simplify $\frac{6gghlhhg}{ww}$ using exponents.

17. What is $1\text{km} / 1\text{cm}$?

18. $F \cos \alpha + T \sin \beta = 5$

19. $E = mc^2$

20. $\frac{k}{p} = V$