

## Solving Algebra Equations

Answer the following on your POD paper. Answers will be whole numbers (unless noted).

1. Solve the following equations and check each answer. **You must show each step!**

a.  $3x + 7 = 31$

b.  $2x - 9 = 13$

c.  $\frac{x}{6} + 8 = 11$

2. For this problem, choose either Level 1 or Level 2.

### Level 1:

Solve the following equations. **You must show each step.**

a.  $3x + 8 = 14$

b.  $\frac{x}{3} + 11 = 13$

c.  $2x - 5 = 5$

d.  $\frac{x}{8} - 7 = 3$

e.  $2 = 6x - 4$

f.  $6 = \frac{x}{7} + 3$

Be careful with the negatives in these. **You must show each step.**

g.  $-3x - 5 = 13$

h.  $\frac{x}{-10} + 3 = -3$

i.  $5x - 7 = -37$

### Level 2:

Solve the following equations. **You must show each step.**

a.  $\frac{x}{8} - 15 = -13$

b.  $-13 = -3x + 8$

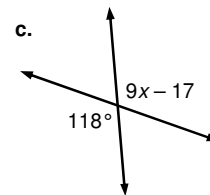
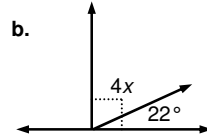
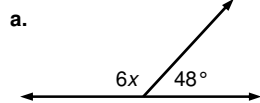
c.  $-2 = \frac{x}{-4} + 5$

d.  $-8x - 44 = 28$

e.  $5 = \frac{x}{-7} + 11$

f.  $-25 = -6x + 17$

3. For each of the following diagrams, write and solve an equation to find the value of  $x$ .



4. The following algebra equations are also two-step equations. Solve them and show each step!

a.  $\frac{x + 9}{3} = 8$

b.  $\frac{x - 18}{-5} = 2$

c.  $-6 = \frac{x + 22}{8}$

5. The following algebra equations will have decimal solutions. Solve them and show each step!

a.  $-7x + 1.8 = 25.6$

b.  $\frac{x}{4} - 5.7 = -2.1$

c.  $5.4x - 8.1 = -32.4$

d.  $\frac{x}{-8} + 15.6 = -2.8$

e.  $-6x - 4.7 = -20.3$

f.  $\frac{x}{6} - 8.3 = 0.9$

6. Solve the following equations. **You must show each step.**

a.  $\frac{x}{-5} + 12 = -8$

b.  $4x - 12 = -68$

c.  $\frac{x}{3} - 12 = -19$

d.  $-37 = -7x - 9$

e.  $9 = \frac{x}{-4} + 17$

f.  $15 = -6x - 9$