Section 1.2: Solving Multi-Step Equations

Solve the equation. Check your solution.

1. $3x + 4 = 19$

$-4 \quad -4$

$\frac{3x}{3} = \frac{15}{3}$

$x = 5$

2. $5z - 13 = -3$

$+13 \quad +13$

$\frac{5z}{5} = \frac{10}{5}$

$z = 2$

3. $\frac{f}{4} - 5 = -9$

$+5 \quad +5$

$4\left(\frac{f}{4}\right) = (-4)4$

$f = -16$

4. $15 = 6 - d$

$-6 \quad -6$

$\frac{-9}{-1} = \frac{-d}{-1}$

$9 = d$

$d = 9$

5. $3\left(\frac{x-5}{3}\right) = (8)3$

$x - 5 = 24$

$+5 \quad +5$

$x = 29$

6. $12x + 4 + 2x = 39$

$14x + 4 = 39$

$-4 \quad -4$

$\frac{14x}{14} = \frac{35}{14_2}$

$x = \frac{5}{2}$

7. $9z - 5 - 4z = -5$

$5z - 5 = -5$

$+5 \quad +5$

$\frac{5z}{5} = \frac{0}{5}$

$z = 0$

8. $-4(z - 12) = 42$

$-4z + 48 = 42$

$-48 \quad -48$

$\frac{-4z}{-4} = \frac{-6^3}{-4_2}$

$z = \frac{3}{2}$

9. $3(2g - 6) + 7 = -29$

$6g - 18 + 7 = -29$

$6g - 11 = -29$

$+11 \quad +11$

$\frac{6g}{6} = \frac{-18}{6}$

$g = -3$

10. $33 = 12r - 3(9 - r)$

$33 = 12r - 27 + 3r$

$33 = 15r - 27$

$+27 \quad +27$

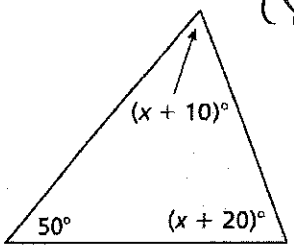
$\frac{60}{15} = \frac{15r}{15}$

$4 = r$

$r = 4$

11. Write and solve an equation to find the value of x. Then find the angle measures of each polygon.

a. The sum S of the angle measures of a triangle is 180°.



$(x+10) + (x+20) + 50 = 180$

$2x + 80 = 180$

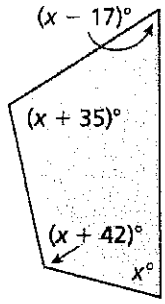
$-80 \quad -80$

$\frac{2x}{2} = \frac{100}{2}$

$x = 50$

50°, 60°, 70°

b. The sum S of the angle measures of a quadrilateral is 360°.



$(x-17) + (x+35) + (x+42) + x = 360$

$4x + 60 = 360$

$-60 \quad -60$

$\frac{4x}{4} = \frac{300}{4}$

$x = 75$

75°, 58°, 110°, 117°

12. One angle of a triangle has a measure of 60°. The measure of the third angle is 40° more than twice the measure of the second angle. The sum of the angle measures of a triangle is 180°. What is the measure of the second angle? What is the measure of the third angle?

$60 + x + 2x + 40 = 180$

$3x + 100 = 180$

$-100 \quad -100$

$\frac{3x}{3} = \frac{80}{3}$

$x = 26\frac{2}{3}$

2nd: $26\frac{2}{3}°$

3rd: $93\frac{1}{3}°$