1. $c - 13 = 54$ for $c = 67$

$$c - 13 = 54$$
$$67 - 13 \stackrel{?}{=} 54$$
$$54 \stackrel{?}{=} 54$$

Yes; since $54 = 54$, 67 is a solution to $c - 13 = 54$.

2. $5r = 65$ for $r = 15$

$$5 \cdot 15 \stackrel{?}{=} 65$$
$$75 \neq 65$$

No, 15 is not a solution.

3. $48 \div x = 6$ for $x = 8$

$$48 \div 8 \stackrel{?}{=} 6$$
$$6 = 6$$

Yes, 8 is a solution.

4. Since there are 4 quarters in a dollar, the equation to check is $3q = d$ where $q = 4$ and $d = 12$

$$3 \times 4 \stackrel{?}{=} 12$$
$$12 \stackrel{?}{=} 12$$

Since $12 = 12$, 12 quarters is equal to $3.

5.
$$\begin{array}{rcr} p + 51 & = & 76 \\ -51 & & -51 \\ \hline p & = & 25 \end{array}$$

6.
$$\begin{array}{rcr} 107 & = & 19 + j \\ -19 & & -19 \\ \hline 88 & = & j \end{array}$$
$$j = 88$$

7.
$$\begin{array}{rcr} 45 & = & s + 27 \\ -27 & & -27 \\ \hline 18 & = & s \end{array}$$
$$s = 18$$

8. Let w represent the length of the section of the Great Wall that is now in ruins.

$$\begin{array}{rcr} 6{,}350 + w & = & 6{,}850 \\ -6{,}350 & & -6{,}350 \\ \hline w & = & 500 \\ w & = & 500 \text{ km} \end{array}$$

9.
$$\begin{array}{rcr} k - 5 & = & 17 \\ +5 & & +5 \\ \hline k & = & 22 \end{array}$$

10.
$$\begin{array}{rcr} 150 & = & p - 30 \\ +30 & & +30 \\ \hline 180 & = & p \end{array}$$
$$p = 180$$

11. $n - 24 = 72$

$$\underline{\quad +24 \qquad +24}$$

$n \quad\;\; = \quad 96$

12. Let k represent the height of Kingda Ka.

$k - 420 = \quad 36$

$$\underline{\quad +420 \qquad +420}$$

$k \qquad = \quad 456$

$k \qquad = \quad 456$ feet

13. $6f = 18$

$$\frac{6f}{6} = \frac{18}{6}$$

$f = 3$

14. $105 = 5d$

$$\frac{105}{5} = \frac{5d}{5}$$

$21 = d$

$d = 21$

15. $11x = 99$

$$\frac{11x}{11} = \frac{99}{11}$$

$x = 9$

16. Let g represent how much Taryn pays per glass.

$8g = 48$

$$\frac{8g}{8} = \frac{48}{8}$$

$g = 6$

$g = \$6$

17. $10 = \dfrac{j}{9}$

$10 \cdot 9 = \dfrac{j}{9} \cdot 9$

$90 = j$

18. $5 = \dfrac{t}{6}$

$5 \cdot 6 = \dfrac{t}{6} \cdot 6$

$30 = t$

19. $\dfrac{r}{15} = 3$

$\dfrac{r}{15} \cdot 15 = 3 \cdot 15$

$r = 45$

20. $\dfrac{\text{pounds of peaches}}{2} = \text{number of pies}$

Let p represent the pound of peaches needed.

$$\frac{p}{2} = 6$$

$$\frac{p}{2} \cdot 2 = 6 \cdot 2$$

$$p = 12$$