

Ch. 6A Review (Equations)

1. Four times Audrey's age plus 7 is Parag's age. Parag is 51. What is Audrey's age?

$a = \text{Audrey's age}$

$$\begin{array}{r} 4a + 7 = 51 \\ -7 \quad -7 \\ \hline 4a = 44 \end{array}$$

$$\frac{4a}{4} = \frac{44}{4}$$

$$a = \boxed{11 \text{ years}}$$

2. Larue scored 10 points less than 3 times the number of points that Ross scored. Larue scored 11 points. How many points did Ross score?

$r = \# \text{ of points Ross scored}$

$$\begin{array}{r} 11 = 3r - 10 \\ +10 \quad +10 \\ \hline 21 = 3r \end{array}$$

$$\frac{21}{3} = \frac{3r}{3} \Rightarrow r = \boxed{7 \text{ points}}$$

What is the solution of each equation?

3. $7 + n = -5$

$$\begin{array}{r} -7 \quad -7 \\ \hline n = \boxed{-12} \end{array}$$

4. $11 = y - 6$

$$\begin{array}{r} +6 \quad +6 \\ \hline \boxed{17} = y \end{array}$$

5. $8 = x + 1$

$$\begin{array}{r} -1 \quad -1 \\ \hline \boxed{-7} = x \end{array}$$

6. $t - 34 = -15$

$$\begin{array}{r} +34 \quad +34 \\ \hline t = \boxed{19} \end{array}$$

7. $96 = 12d$

$$\begin{array}{r} \frac{96}{12} \quad \frac{12d}{12} \\ \hline \boxed{8} = d \end{array}$$

8. $\frac{1}{3}a = \frac{7}{9} \cdot 3$

$$a = \frac{21}{9} = \boxed{\frac{7}{3}} \text{ OR } \boxed{2\frac{1}{3}}$$

9. $4x + 1 = -15$

$$\begin{array}{r} -1 \quad -1 \\ \hline 4x = -16 \\ \frac{4x}{4} = \frac{-16}{4} \\ x = \boxed{-4} \end{array}$$

10. $4z = 20$

$$\begin{array}{r} \frac{4z}{4} = \frac{20}{4} \\ z = \boxed{5} \end{array}$$

11. $\frac{5}{5}y = -2 \cdot 5$

$$y = \boxed{-10}$$

12. $7 + \frac{7}{9}x = -42$

$$\begin{array}{r} -7 \quad -7 \\ \hline \frac{7}{9}x = -49 \\ \frac{7}{7} \cdot \frac{7}{9}x = -49 \cdot \frac{9}{7} \\ x = \boxed{-63} \end{array}$$

13. $\frac{5}{3} \cdot \frac{3}{5}x = 18 \cdot \frac{5}{3}$

$$x = \boxed{30}$$

14. $2x + 9 = -5$

$$\begin{array}{r} -9 \quad -9 \\ \hline 2x = -14 \\ \frac{2x}{2} = \frac{-14}{2} \Rightarrow x = \boxed{-7} \end{array}$$

15. $-0.4(x + 3) = 4$

$$\begin{array}{r} -0.4 \quad -0.4 \\ \hline x + 3 = -10 \\ -3 \quad -3 \\ \hline x = \boxed{-13} \end{array}$$

16. $0.4p = -9$

$$\begin{array}{r} \frac{0.4p}{0.4} = \frac{-9}{0.4} \\ p = \boxed{-22.5} \end{array}$$

17. The Leungs sold a valuable painting for \$55,000. This price is \$1,000 more than twice the amount they originally paid for it. How much did they originally pay?

$P =$ original price

$$\begin{array}{r} 1000 + 2p = 55000 \\ -1000 \quad -1000 \\ \hline 2p = \frac{54000}{2} \Rightarrow p = \boxed{27,000} \end{array}$$

18. In a volleyball game, Alexis scored 4 points more than twice the number of points Jessica scored. Jessica scored 3 points. How many points did Alexis score?

$a =$ # of points Alexis scored

$$\begin{aligned} a &= 4 + 2(3) \\ &= 4 + 6 = \boxed{10 \text{ points}} \end{aligned}$$

What is the solution of each equation?

19. $m - 12 = 11$

$$\begin{array}{r} +12 \quad +12 \\ \hline m = \boxed{23} \end{array}$$

20. $\frac{x}{-5} = -6 \cdot -5$

$$x = \boxed{30}$$

21. $6x = -48$

$$\begin{array}{r} 6 \quad 6 \\ \hline x = \boxed{-8} \end{array}$$

22. $7 + \frac{2}{5}x = 1$

$$\begin{array}{r} -7 \quad -7 \\ \hline \frac{2}{5}x = -6 \\ \frac{5}{2} \cdot \frac{2}{5}x = -6 \cdot \frac{5}{2} \\ x = \boxed{-15} \end{array}$$

23. $\frac{1}{3}y = 4\frac{5}{6} \cdot 3$

$$y = \frac{29}{2} \cdot \frac{3}{1} = \left(\frac{29}{2}\right) \text{ or } \boxed{14\frac{1}{2}}$$

24. $-12 = 4.7k + 11.5$

$$\begin{array}{r} -11.5 \quad -11.5 \\ \hline -23.5 = 4.7k \\ \frac{-23.5}{4.7} = \frac{4.7k}{4.7} \Rightarrow \boxed{-5} = k \end{array}$$

25. $-3m - 21 = -6$

$$\begin{array}{r} +21 \quad +21 \\ \hline -3m = 15 \\ \frac{-3m}{-3} = \frac{15}{-3} \\ m = \boxed{-5} \end{array}$$

What is an equivalent equation for the given equation?

26. $6x + 10 = 23$

A. $6x = 13$

C. $23 = 10 - 6x$

B. $6x = 33$

D. $-23 = -6x + 10$

27. $-4(x - 11) = 16$

F. $x - 11 = 4$

H. $-4x - 11 = 16$

G. $x - 11 = -4$

I. $-4x + 44 = 64$