

Algebra Unit 3 Study Guide--Equations

1. Solve $|-4n + 2| = 6$.

Solve each equation.

2. $-4(p + 2) + 8 = 2(p - 1) - 7p + 15$

3. If Sarah is driving 1.4 miles, how many inches would she be driving? Use Dimensional Analysis.

1 inch = 2.5 cm
1 mile = 5280 feet
1 mile = 1760 yds
12 inches = 1 ft.
3 feet = 1 yard

Translate the sentence into an equation.

4. The sum of one-fifth
- p
- and 38 is as much as twice
- p
- .

5. Eighty-five minus five times
- x
- is equal to ten.

Solve the equation. Then check your solution.

6. $3 + \frac{1}{2}(5k + 2) = 14$

7. $13n + 6 = 12n - 2$

8. $\frac{4}{5}k + 6 = 1 + \frac{1}{2}k$

Solve the equation. Then check your solution.

9. $\frac{n}{48} = \frac{5}{8}$

10. $174 = -87q$

11. $\frac{a}{6.7} - 1 = 3$

12. $-2x + 11 = -21$

13. $n - \frac{2}{7} = \frac{8}{9}$

14. Translate the following equation into a verbal sentence.

$3(x + y) = 2y - x$

15. $-7 + 4x + 8 = 2x + 1 + 2x$

16. How many cups of water are in 4 gallons? Use Dimensional Analysis.

2 cups = 1 pt
1 gallon = 4 quarts
2 pts = 1 quart
128 fl oz. = 1 gallon

17. Solve.

$$\frac{x+2}{8} = 12$$

18. If you are driving 10 miles per hour, how many meters per hour are you driving? Use Dimensional Analysis.

$$1 \text{ hour} = 60 \text{ seconds}$$

$$1 \text{ mile} = 5280 \text{ ft.}$$

$$1 \text{ km} = 1000 \text{ m}$$

$$100 \text{ cm} = 1 \text{ m}$$

$$1 \text{ mile} = 1760 \text{ yards}$$

$$1 \text{ mile} = 1.6 \text{ km}$$

19. Solve $|x - 4| = 5$.

Translate the equation into a verbal sentence.

20. $5 + 2(v - 3) = w \div 4$

21. Solve $\frac{a}{b}x - c = 0$ for x .

22. $2x + 7 = 4(x - 2) - 2x$

Write an equation and solve each problem.

23. Find three consecutive integers with a sum of 24.

32. $2mn + 10p = 7k$ for m

24. Find three consecutive even integers with a sum of 48.

25. For 24-28: $f(x) = 8x + 3$ and $g(x) = 5 + x$

24. $\{f(4) \cdot g(2)\}?$

26. $(f \cdot g)(1)$

27. $(f + g)(-10)$

28. $(f + g)(-2)$

29. $(f - g)(10)$

30. Translate the following sentence into an equation.
A number x subtracted from 36 is three times the sum of four and x .

Solve the equation or formula for the variable specified.

31. $qr - 4t = 4$ for q