

1. Solve each equation. Identify each equation as an identity, inconsistent, or conditional equation.

a. $\frac{1}{w-1} - \frac{1}{2w-2} = \frac{1}{2w-2}$

b. $\frac{z-3}{z+2} = -\frac{5}{3}$

2. Solve the absolute value equations

a. $|x-4|=8$

b. $2|x+5|-10=0$

c. $|x+8|=-3$

3. If I buy a 2012 Tacoma for \$34,000 and that price includes 7% sales tax, then how much does the truck cost *before* sales tax?
4. Johnny splits a \$12,000 investment into two smaller investments. The higher-risk account has a rate of return of 7% and the lower-risk account has a rate of return of 5%. If Johnny earns \$740 in interest after one year, how much did he invest in each account?
5. Jim can stack 500 hay bales in 3 hours. It takes Jenny 4 hours to stack 500 hay bales. How long does it take the two of them to stack 500 hay bales if they work together?

6. Suppose Jenny starts stacking hay bales at 7 a.m. and Jim doesn't join her until 8 a.m. To the nearest *minute*, what time will they finish?

7. Find the distance between and the midpoint of the two points $P(2, 5)$ and $Q(-3, 9)$.

Distance =

Midpoint =

8. Determine the center and radius of the circle and sketch its graph:

a. $(x - 9)^2 + (y + 8)^2 = 4$

b. $x^2 + y^2 + 6x - 14y + 58 = 25$

9. Graph each equation. Show any x - or y -intercepts.

a. $2x + 3y = 12$

b. $y = \frac{2}{3}x + 12$

10. Write an equation of the line through the points $P(2, 5)$ and $Q(-3, 9)$. Express the equation in all three forms:

- i. Point-Slope
- ii. Slope-Intercept
- iii. Standard

11. Write an equation in point-slope form of the line through $P(3, -7)$ that is...

a. ... parallel to the line $y = \frac{3}{\pi}x + \frac{11}{97}$

b. ... perpendicular to the line $y = \frac{3}{\pi}x + \frac{11}{97}$

12. Solve $x^2 - 11x - 42 = 0$ in two ways:

a. Completing the square

b. Quadratic formula

13. Solve the inequalities. Give your answers in two forms:

- i. Set-Builder Form
- ii. Interval Notation

a. $3x - 2 > 4$ and $17 - 2x \geq -5$

b. $3x - 2 > 4$ or $17 - 2x \geq -5$

c. $3x + 10 < 5$ or $2x - 13 > 27$

d. $3x + 10 < 5$ and $2x - 13 > 27$

e. $|3x - 2| \geq 4$

f. $|3x - 2| \leq 4$

g. $|3x - 2| \leq -4$

h. $|3x - 2| \geq -4$