

Chapter 1 Review

Solve each equation. Justify each step and check your work.

1) $(\frac{x}{10}) - (15) = 10$ $x = 150$ $\frac{150}{10} = 15$
 $15 = 15 \checkmark$

2) $-19 = -15 + p$ Add. prop. of eq. $-19 = -15 - 4$
 $+15 +15$ $-19 = -19 \checkmark$
 $p = -4$

4) $11 = x + (-8)$ $19 - 8 = 11$
 $+8 +8$ $11 = 11 \checkmark$
 $x = 19$

3) $(58) = (\frac{a}{78})^{78}$ $4524 = a$ $58 = \frac{4524}{78}$
 $58 = 58 \checkmark$
 Multiplication property equality

Solve each equation.

5) $-2n + 4 = -14$
 $-4 -4$ $n = 9$
 $-2n = -18$

6) $-5x + 3 = -22$ $-5x = -25$
 $-3 -3$ $x = 5$

7) $12 - 6k = -72$
 $-12 -12$ $k = 14$
 $-6k = -84$

8) $-2 + \frac{p}{2} = -4$ $2(\frac{p}{2}) = (-2)^2$
 $+2 +2$ $p = -4$

9) $2 + 14r = 16$ $14r = 14$ $r = 1$
 $-2 -2$

10) $6(20 + b) = -42$ $20 + b = -7$ $b = -27$
 $\frac{6}{6}$ $\frac{-42}{6}$ $-20 -20$

Solve each equation. Answers may include one solution, no solution or infinitely many solutions.

11) $\frac{113}{-5} = 6(3 - 3p) + 5$ $6(3 - 3p) = 108$
 $3 - 3p = 18$ $-3p = 15$ $p = -5$

12) $-260 = -5(5 + 8n) + 5$ $-265 = -5(5 + 8n)$
 $-5 -5$ $5 + 8n = 53$ $8n = 48$ $n = 6$

13) $5(p - 2) = -9 + 5p$
 $5p - 10 = -9 + 5p$ $-10 = -9 \Rightarrow$ No Solution

14) $-3 - 4r = -1 - 2(1 + 2r)$
 $-3 - 4r = -1 - 2 - 4r$ $-3 - 4r = -3 - 4r$
 infinitely many solutions

Solve the literal equation for y.

15) $2y - 18x = -26$
 $+18x$ $\frac{2y}{2} = \frac{18x - 26}{2}$ $y = 9x - 13$

16) $11 - \frac{1}{2}y = 3 + 6x$ $(-\frac{1}{2}y) = (-8 + 6x) \cdot -2$
 -11 -11 $y = 16 - 12x$

Your car needs new brakes. You call a dealership and a local mechanic for prices.

	Cost of parts	Labor cost per hour
Dealership	\$24	\$99
Local Mechanic	\$45	\$89

a. After how many hours are the total costs the same at both places? Justify your answer.

b. When do the repairs cost less at the dealership? at the local mechanic? Explain.

$24 + 99x = 45 + 89x$
 $-24 -89x -24 -89x$
 $10x = 21$
 $x = \frac{21}{10} = 2.1 \text{ hours}$

Dealership repair costs less up to 2.1 hours. After 2.1 hours, the local mechanic is cheaper.