What you will learn about:
Problem-Solving Strategy

Use a Problem-Solving Strategy to solve word problems

Step1. **Read** the problem. Make sure all the words and ideas are understood.

Step 2. **Identify** what we are looking for.

Step 3. **Name** what we are looking for. Choose a variable to represent that quantity.

Step 4. **Translate** into an equation. It may be helpful to restate the problem in one sentence with all the important information. Then, translate the English sentence into an algebraic equation.

Step 5. **Solve** the equation using good algebra techniques.

Step 6. **Check** the answer in the problem and make sure it makes sense.

Step 7. **Answer** the question with a complete sentence.

Pilar bought a purse on sale for $18, which is one-half the original price. What was the original price of the purse?

p = original Price of Purse

$2\left(\frac{1}{2}p\right) = (18)^2$

$p = 36$

Original Price $36

120
3
360

Joaquin bought a bookcase on sale for $120, which was two-thirds of the original price. What was the original price of the bookcase?

p = original Price

$\frac{3}{2}\left(\frac{2}{3}p\right) = (120)\frac{3}{2}$

$p = 180$

22 - Sud

7 - CW

Gerry worked Sudoku puzzles and crossword puzzles this week. The number of Sudoku puzzles he completed is eight more than twice the number of crossword puzzles. He completed 22 Sudoku puzzles. How many puzzles did he do?

X = # of puzzles

$22 = 2c + 8$

$14 = 2c$

$c = 7$

$X = 22 + 7$

$X = 29$

Solving number problems

The difference of a number and six is 13. Find the number.

$x-6=13$

$x=19$

The sum of twice a number and seven is 15. Find the number.

$2x+7=15$ $\quad 2x=8$ $\quad x=4$

One number is five more than another. The sum of the nubmer is 21. Find the number. $x + x+5 = 21$

$2x+5=21$

$2x=16$ $\quad x=8$

One number is six more than another. The sum of the numbers is twenty-four. Find the numbers.

$x+x+6=24$ $\quad x=9$

$2x+6=24$ $\quad x+6=15$

$2x=18$

The sum of two numbers is -18. One number is 40 more than the other. Find the numbers. $x+x+40=-18$ $\quad x=-29$

$2x+40=-18$ $\quad x+40=11$

$2x=-58$

One number is three more than three times another. The sum is -5. Find the numbers. $x=-2$

$3x+3=-3$ $\quad x+3x+3=-5$

$4x+3=-5$ $\quad x=-2$

$4x=-8$

1st	2nd
x	x+1
23	24

The sum of two consectutive integers is 47. Find the numbers

$x+x+1=47$ $\quad 2x=46$

$2x+1=47$ $\quad x=23$

1st	2nd
x	x+1
47	48

The sum of two consectutive integers is 95. Find the numbers.

$x+x+1=95$

$2x+1=95$

$2x=94$

47
$2\overline{)94}$
8
14

$x=47$

1st	2nd	3rd
X	X+1	X+2
-15	-14	-13

X	X+1	X+2
-33	-32	-31

Even number

2x

1st	2nd	3rd
2x	2x+2	2x+4
26	28	30

32, 34, 36

$$3\overline{)126{,}000} \quad 42{,}000$$

12
06
6
0

Find three conseutive integers whose sum is -42.

$X+X+1\ X+2=-42$ $\quad X=-15$

$3X+3=-42$

$3X=-45$

Find three consectutive integers whose sum is -96.

$X+X+1+X+2=-96$ $\quad X=-33$

$3X+3=-96$

$3X=-99$

Find three consectutive even integers whose sum is 84.

$2x+2x+2+2x+4=84$

$6X+6=84$

$6X=78$

$X=13$

1
58
24
84

Find three consectuve even intergers whose sum is 102.

$2x+2x+2+2x+4=102$ $\quad 6X=96$

$6X+6=102$ $\quad X=16$

A married couple together earns $110,000 a year. The wife earns $16,000 less than twice what her husband earns. What does the husband earn?

X = husband earns

wife earns = $2x-16{,}000$

$X+2x-16{,}000=110{,}000$

$3X-16{,}000=110{,}000$

$3X=126{,}000$

$X=\$42{,}000$

According to the National Automobile Dealers Association, the average cost of a car in 2014 was $28,500. This was $1,500 less than 6 times the cost in 1975. What was the average cost of a car in 1975?

X = cost car 1975

$6X-1500=28{,}500$

$6X=30{,}000$

$X=\$5000$

What you will learn about:
Percent Problems

Tanslate and solve: What nmber is 35% of 90?

$90(.35) = 31.50$

Tanslate and solve: What number is 45% of 80?

$80(.45) = 36$

Translale and solve: 6.5% of what number is $1.17?

$(.065)x = 1.17$

$X = 18$

Translate and solve: 7.5% of what number is $1.95?

$.075x = 1.95$

$X = 26$

Translate and solve: 144 is what percent of 96?

$\frac{144}{96}$

Translate and solve: 126 is what percent of 72?

$\frac{126}{72}$

$(1.75)(100)$

175%