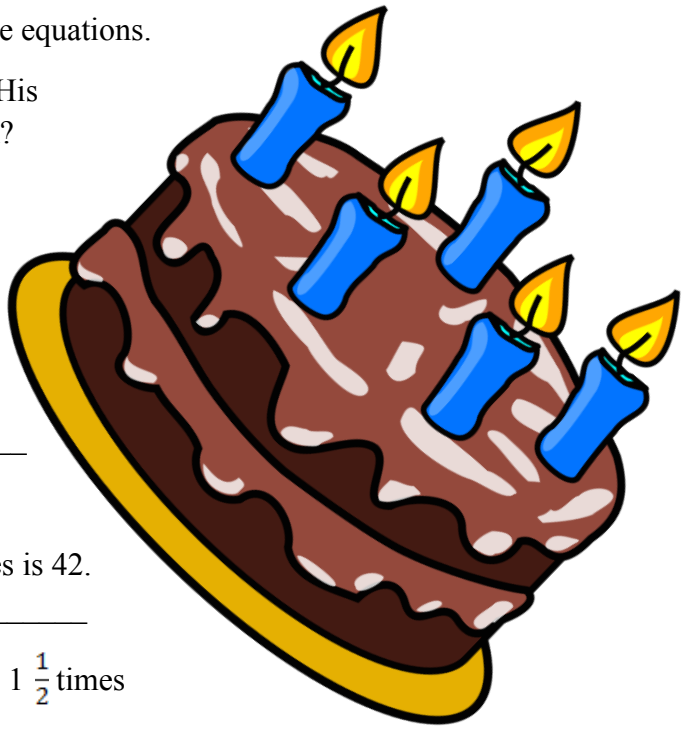
PRIME ma+h gazine Senior!

Age Equations

Write equations to solve the problems. Then solve the equations.



1. Jason was born when his father was 24 years old. His father is now twice as old as Jason. How old is Jason?

_____

2. Andrew said that if you divide his age by 3, you will get his sister's age. The difference between Andrew's age and his sister's is 6. How old is Andrew?

_____

3. Elaine is 5 years younger than her sister and 5 years older than her brother. The sum of all three ages is 42. How old is Elaine? _____

4. Steven is 5 years older than his brother. He is also $1\frac{1}{2}$ times as old as his brother. How old is Steven?

_____

5. Carol is 5 years older than her cousin Peter. Peter is 2 years older than Hector. The sum of all three ages is 33. How old is Carol?

_____

6. Mary is now 10 years younger than her brother Daniel. In 3 years, Daniel will be twice Mary's age. How old is Mary now?

_____

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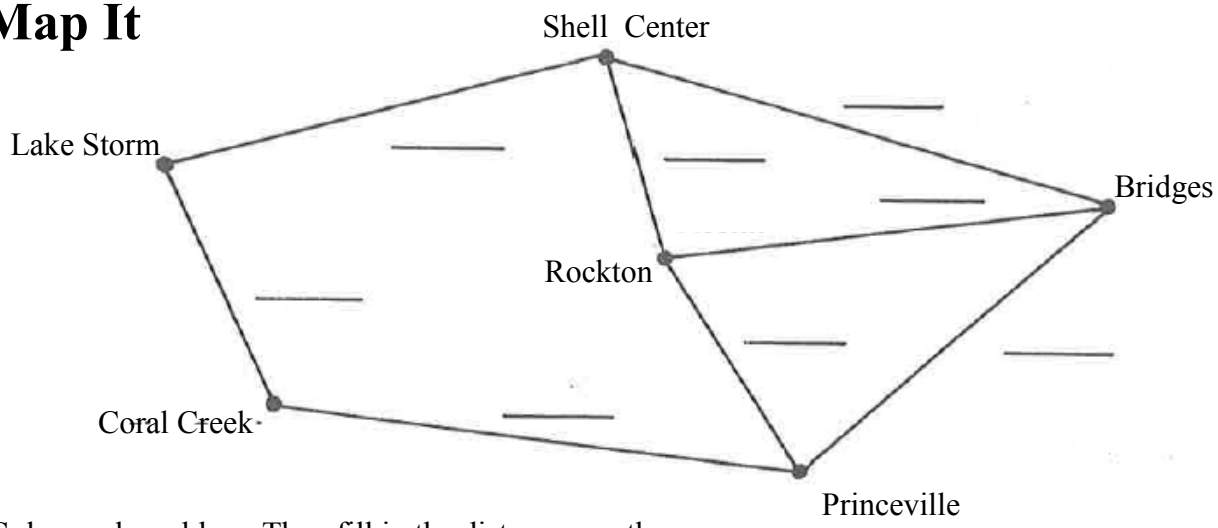
Map It



Solve each problem. Then fill in the distances on the map.

1. It takes $2\frac{1}{2}$ hours to drive from Lake Storm to Shell Center at an average speed of 40 miles per hour. How far is it from Lake Storm to Shell Center? _____
2. At 50 miles per hour it would take 2 hours 48 minutes to drive from Shell Center to Bridges. How far is it from Shell Center to Bridges? _____
3. At 45 miles an hour it would take twice as long to drive from Lake Storm to Shell Center as it would from Lake Storm to Coral Creek. How far is it from Lake Storm to Coral Creek? _____
4. The trip from Shell Center to Bridges through Rockton is 20 miles farther than the distance from Shell Center to Bridges. The distance from Shell Center to Rockton is $\frac{1}{4}$ of the distance from Shell Center to Bridges through Rockton. How far is it from Rockton to Bridges? _____
5. A trip from Rockton to Princeville to Bridges and back to Rockton at 60 miles per hour would take 4 hours 30 minutes. The distance from Rockton to Princeville is $\frac{1}{2}$ the distance from Princeville to Bridges. How far is it from Princeville to Bridges? _____
6. At 50 miles per hour the trip from Prineville to Coral Creek would take 36 minutes longer than the trip from Princeville to Bridges. How far is the trip from Princeville to Coral Creek? _____

What's the "a"?

Use the clues to figure out the value of "***a***".

1. **Clues**
   - $a > 20$ and $a < 50$
   - ***a*** is a prime number.
   - The sum of the digits of ***a*** is 4.

   a is _____

2. **Clues**
   - $a \geq 30$ and $a \leq 50$
   - ***a*** is an even number or ***a*** is a multiple of 3.
   - ***a*** is a multiple of 7.

   a is _____

3. **Clues**
   - $a < 100$ and a is a multiple of 3.
   - ***a*** is divisible by 7.
   - ***a*** is an odd integer or ***a*** is divisible by 5.
   - ***a*** has exactly 4 factors.

   a is _____

4. **Clues**
   - $a \leq 200$.
   - ***a*** is divisible by 2 and ***a*** is a three-digit number.
   - 40 is a factor of ***a*** or ***a*** is an odd integer.
   - ***a*** is a multiple of 25 and not a multiple of 6.
   - ***a*** is _____

5. **Clues**
   - ***a*** is a factor of 30 or ***a*** is a factor of 36.
   - $a > 2$ and $a \leq 29$.
   - ***a*** is a multiple of 3 and ***a*** is an odd integer.
   - ***a*** has more than 3 factors.

   a is _____

6. **Clues**
   - $a > 75$ and $a < 150$.
   - $2 \times a < 200$.
   - ***a*** is a multiple of 3.
   - ***a*** is a prime number or ***a*** is a multiple of 11.

   a is _____

7. **Clues**
   - $a \geq 1$ and $a \leq 20$.
   - ***a*** is a prime number or ***a*** is a factor of 20.
   - ***a*** is an even integer.
   - 4 is not a factor of 10.
   - $a \neq 10$.

   a is _____

8. **Clues**
   - $a > 20$ and $a < 40$.
   - ***a*** is a prime number or ***a*** is a multiple of 6.
   - The sum of the digits of ***a*** is greater than 6.
   - ***a*** has 9 factors.

   a is _____

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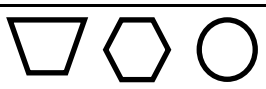
Balzano is a puzzle that will tap into your logical reasoning abilities. Read directions carefully, then try your hand at Balzano Shapes.

Directions:
Your job is to figure out the Desired Arrangement (the solution) of three elements (shapes) from clues that provide information about the shapes and their locations. The possible shapes are **circle, hexagon, parallelogram, trapezoid, and triangle.** No shape may be repeated.
The **Arrangement Column** shows sets of shapes in rows. In the Balzano puzzle below, the second row, arranged in order from left to right, is: trapezoid, hexagon, circle.

Correct Shape in the Correct Place identifies the number of elements that are the correct shape AND are in the right place. The second row has no shapes in the right place.

Correct Shape in the Wrong Place identifies the number of correct shapes BUT in the wrong place. There are 2 of these in the second row.

Incorrect Shape identifies the number of shapes that do not belong in the arrangement. There is 1 of these in the second row.

	Correct Shape/ Correct Place	Correct Shape/ Wrong place	Wrong shape/ Wrong place
	0	1	2
	0	2	1
	1	1	1
	1	0	2
	0	1	2
	0	2	1
	3	0	0

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