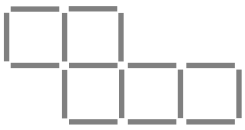
Puzzle Sheet for Adult Workshops

7. Three Men
There are three men – Don, Ron and Lon – two of whom are married, two have brown eyes, and two are bald. The one with hair has blue eyes. Don's wife is Ron's sister. The bachelor and Lon have the same color eyes. Which man has hair?

9. Brothers and Sisters
Ian and Sarah are siblings. Ian has twice as many brothers as sisters, and Sarah has three times as many brothers as sisters. How many children are in the family?

10. Stick Puzzle
Move two sticks into a new position so that you end up with exactly four squares. (Every stick must be part of a square. No two sticks may be placed on top of each other or side-by-side.)



19. Missing-Digit Multiplication
Fill in the missing digits (indicated by "?") of these problems.

```
   ???
 x 74
 2152
+ ????0
 -----
 ?????
```

14. Coin Puzzles
Mark has 30 coins worth $3.90. How many of each type of coin are there if …

a) there are quarters, dimes, and nickels, and there are 50% more nickels than dimes?

b) there are quarters, dimes, and nickels, and the number of nickels is one less than four times the number of dimes?

16. Equal Products
With the configuration on the right, each letter stands for a different (single) digit. Assign values to the letters so that A·B·C and B·D·E and F·E·G are all equal.

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A   F
B D E
C   G
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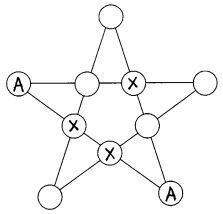
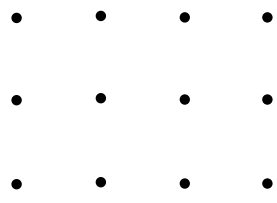
20. A's and X's
The figure here must be filled in such that each row of four circles contains two A's and two X's. Which circle must be filled with an A?



21. Ages of Teenagers
There is a group of teenagers. The product of their ages is 737,100. Find the number of teenagers in the group and the age of each one.

12. Connect the Dots Rectangle
Without lifting your pencil off the page, and ending up back at the place where you started, draw five lines that pass through all 12 of the points in the 4-by-3 grid shown here.



Solutions

7. Three Men

The statement "the bachelor and Lon have the same colored eyes" tells us that Lon must be married and has brown eyes. Don is also married, so Ron must be the bachelor, and therefore must have brown eyes. So Don must have blue eyes, and Don has hair.

9. Brothers and Sisters

There are 13 children in the family (4 girls and 9 boys).

10. Stick Puzzle

Three possible solutions:

19. Missing-Digit Multiplication

a)
```
  538
 x 74
 2152
+37660
 39812
```

14. Coin Puzzles

a) 12 nickels, 8 dimes, 10 quarters.

b) 15 nickels, 4 dimes, 11 quarters.

16. Equal Products

Each of the three strings of numbers must be equal, so their prime factorizations must be equal. Therefore, we know that we can't use the digits 0, 5 or 7 because a given digit can only appear in two of the three products. Now let's consider the factor 3. The digit 9 contains two 3's (in its prime factorization) and the digits 3 and 6 each contain one 3. Therefore we will place the 9 at an intersect point, and the 3 and 6 on corners away from the 9. Now let's consider the factor 2.

The digit 8 contains three 2's, the digit 4 contains two 2's, and the digits 2 and 6 each contain one 2. We simply think of this as we fill in the remaining places of the puzzle. The final answer is shown here.

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8   3
9 2 4
1   6
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20. A's and X's

It is helpful to reframe the question, and instead ask ourselves, "What circles can't be an X?" We can then see that only the bottom-left circle can't be assigned an X, for that would lead to needing one row with three X's or three A's.

21. Ages of Teenagers

There are five teenagers in the group. There are an 18-year-old, a 14-year-old, a 13-year-old, and two 15-year-olds.

12. Connect the Dots Rectangle

I probably shouldn't give this one away. The solution is in my puzzle book!