

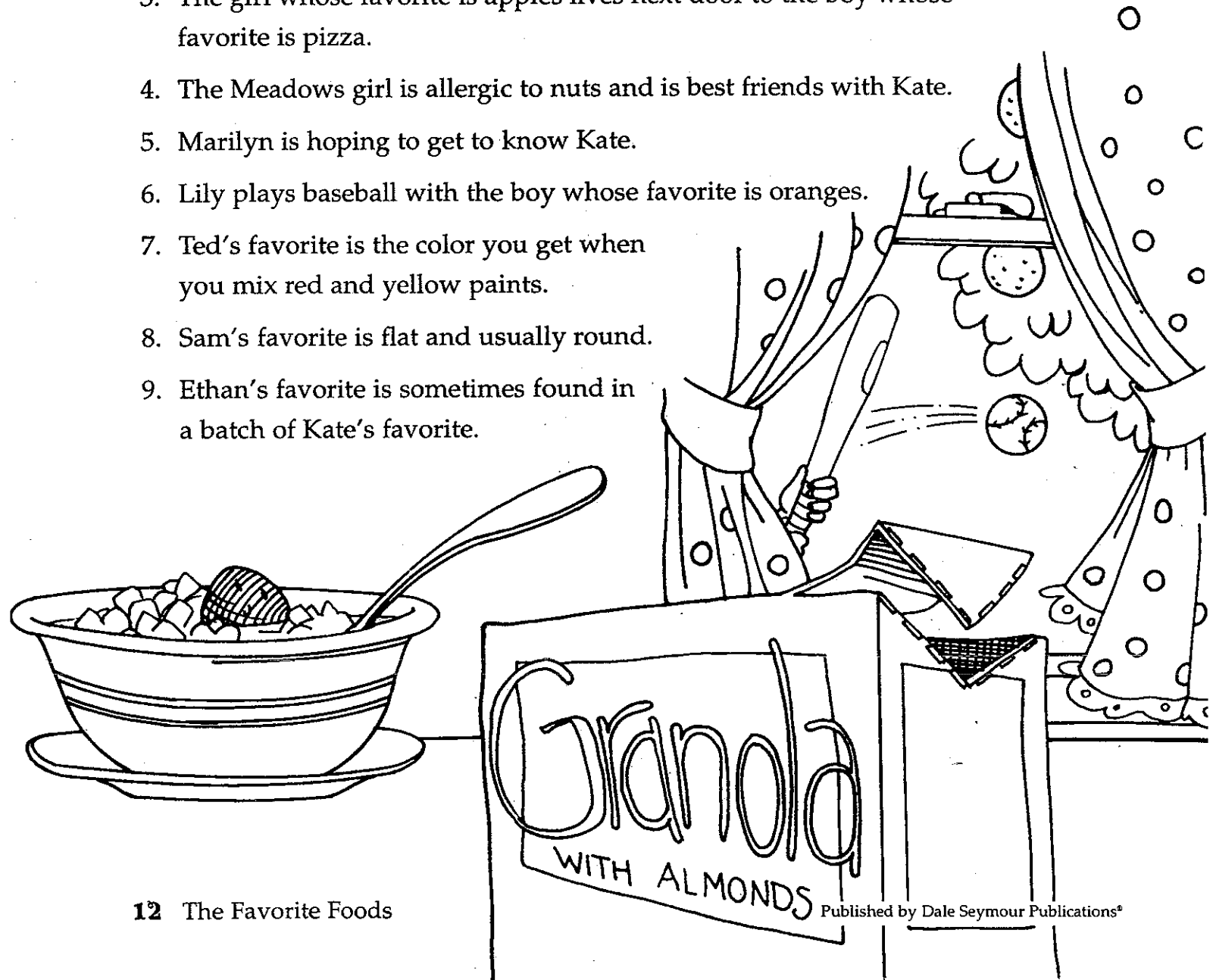
The Favorite Foods

Marilyn, Sam, Kate, Ethan, Lily, and Ted each have a favorite food. Their favorite foods are: apples, granola, pizza, oranges, chicken, and almonds.

What is each child's favorite food?

Clues

1. Lily's favorite grows on a tree.
2. Marilyn's favorite has to be cooked in order to be safe to eat.
3. The girl whose favorite is apples lives next door to the boy whose favorite is pizza.
4. The Meadows girl is allergic to nuts and is best friends with Kate.
5. Marilyn is hoping to get to know Kate.
6. Lily plays baseball with the boy whose favorite is oranges.
7. Ted's favorite is the color you get when you mix red and yellow paints.
8. Sam's favorite is flat and usually round.
9. Ethan's favorite is sometimes found in a batch of Kate's favorite.



Matrix for The Favorite Foods

	apples	granola	pizza	oranges	chicken	almonds
Kate	X	✓	X	X	X	X
Lily <i>True</i>	✓	X	X	X	X	X
Sam	X	X	✓	X	X	X
Ted	X	X	X	✓	X	X
Marilyn <i>Broked</i>	X	X	X	X	✓	X
Ethan	X	X	X	X	X	✓

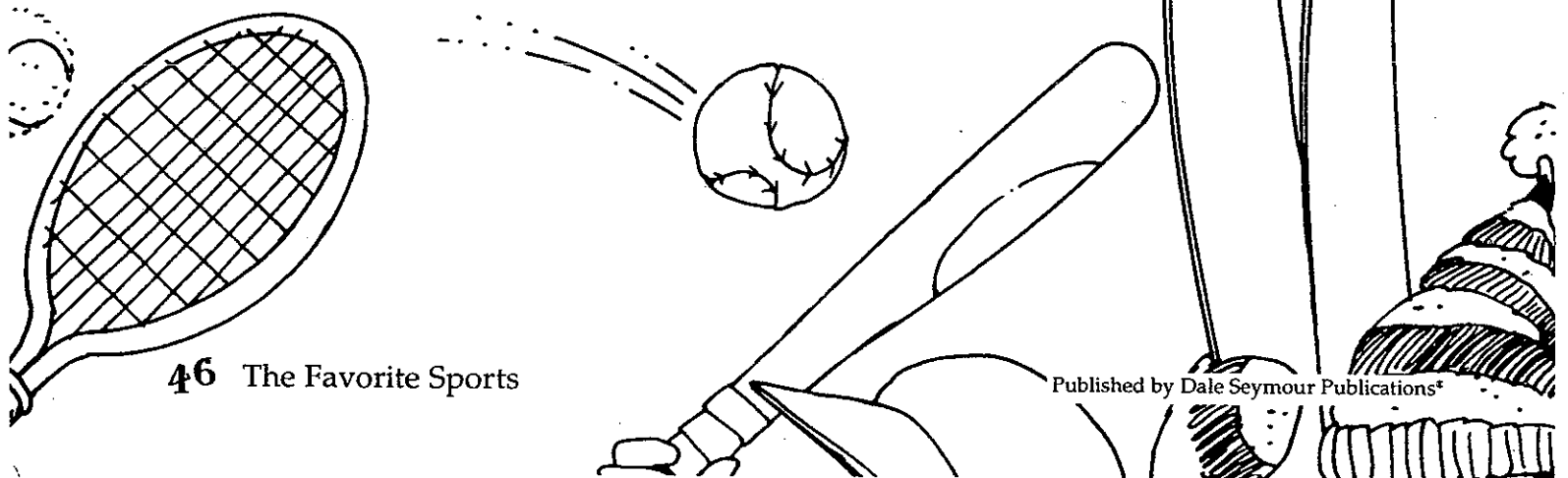
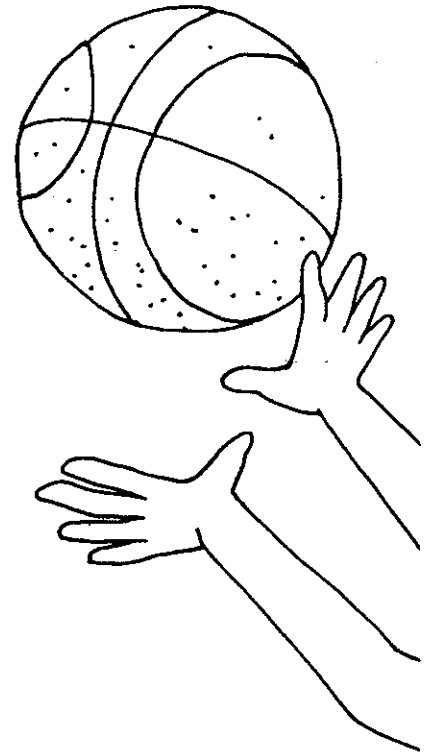
The Favorite Sports

Lizzie, Roberto, Lara, Kevin, Rachel, and Mark each have a favorite sport. Their favorite sports are: gymnastics, baseball, basketball, swimming, tennis, and skiing.

What is each child's favorite sport?

Clues

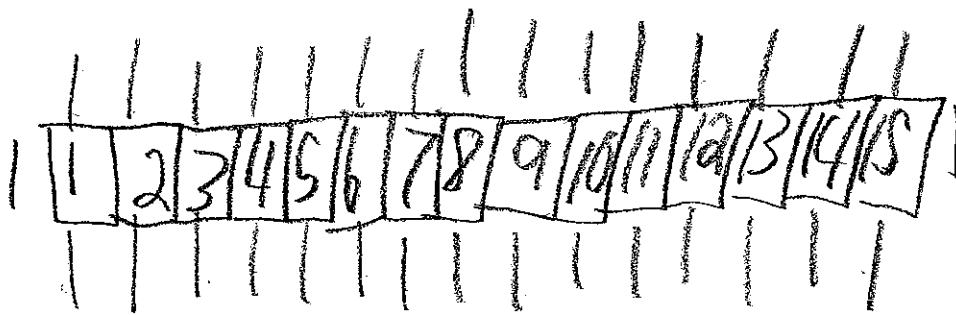
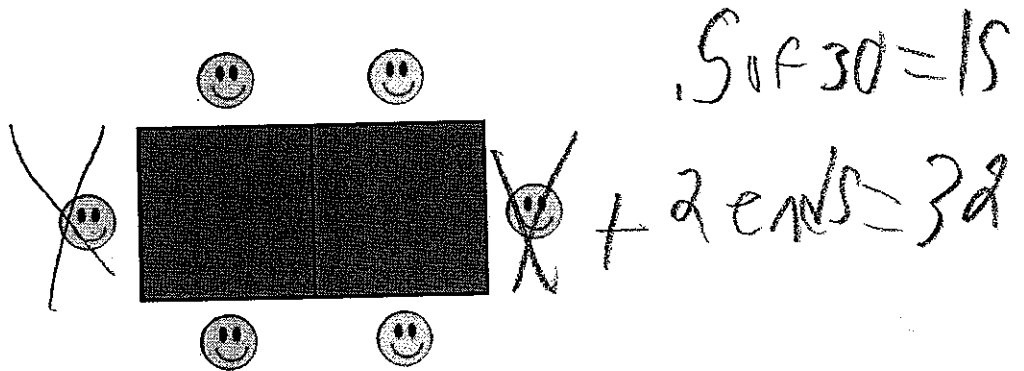
1. Roberto's favorite sport requires a sphere.
2. Lara lives in a small town called Hope.
3. The girl who lives next door to Lara is 9 years old.
4. The oldest boy, who is 12, does his favorite sport on two bars that are parallel.
5. Rachel is 10 years old.
6. The two boys with the longest first names are twins, and the product of their ages is 64.
7. The girl who lives in a large city loves baseball best.
8. The 8-year-old girl loves skiing best.
9. The sphere that Roberto uses for his favorite sport is larger than the sphere that his twin uses for his favorite sport.



Matrix for The Favorite Sports

	gymnastics	baseball	basketball	swimming	tennis	skiing
small teen Lizzie 9	X	X	X	✓	X	X
Roberto 8	X	X	✓	X	X	X
8 Lara small teen	X	X	X	X	X	✓
Kevin 8	X	X	X	X	✓	X
Rachel 10	X	✓	X	X	X	X
Mark 12	✓	X	X	X	X	X

Four people can be seated at a single dinner table.
 If two tables are placed end to end, 6 people can be seated as shown in the diagram. How many tables must be placed end to end to seat 32 people?



end	Middle	total
2	15	32

$$1=4 \quad 2=6 \quad 3=8 \quad 4=10 \quad 5=12 \quad 6=14 \quad 7=16 \quad 8=18 \quad 9=20 \quad 10=22 \quad 11=24$$

$$2=26 \quad 13=28 \quad 14=30 \quad 15=32$$

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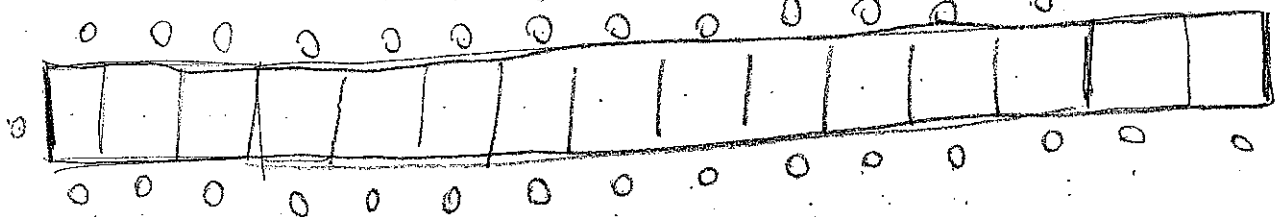
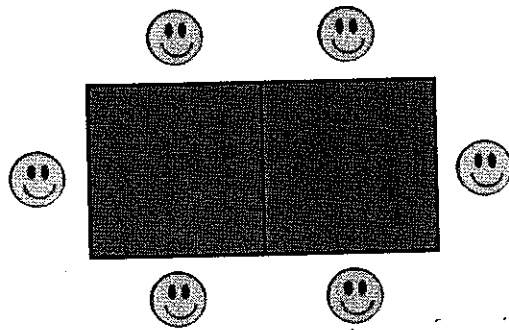
$$1 \text{ table} = 4 \text{ people}$$

$$2 \text{ tables} = 4 \text{ people} + 2$$

$$2x = 4 + 2$$

$$15x = 4 + x$$

$$x = 28$$



$$n \times 2 + 2 = 32$$

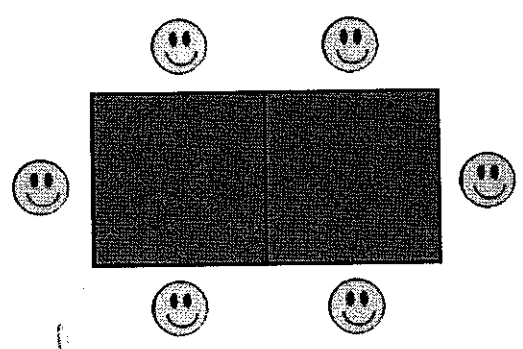
$$\quad \quad -2 \quad -2$$

$$n \times \frac{2}{2} = \frac{30}{2}$$

$$n = 15$$

4/23/12

Four people can be seated at a single dinner table.
If two tables are placed end to end, 6 people can be seated as shown in the diagram. How many tables must be placed end to end to seat 32 people?



15 tables

Tables	Seated
1	4
2	6
3	8
4	10
5	12
6	14
7	16
8	18
9	20
10	22
11	24
12	26
13	28
14	30

$$15 \mid 32$$

AREA PROBLEMS #1 & 2

1. $A = H \times B$

$A = 9 \times 7$

$A = 63 \text{ m}^2$

63 m^2

$A = H \times B \div 2$

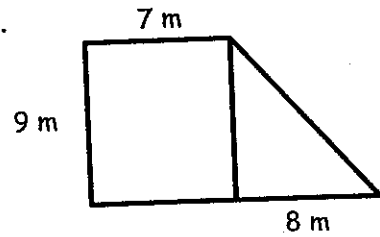
$A = 9 \times 8 \div 2$

$A = 36 \text{ m}^2$

$+ 36 \text{ m}^2$

99 m^2

1.



2. $A = H \times B$

$A = 5 \times 3$

$A = 15 \text{ ft}^2$

15 ft^2

$+ 20 \text{ ft}^2$

$A = H \times B$

$A = 4 \times 5$

$A = 20 \text{ ft}^2$

6 ft^2

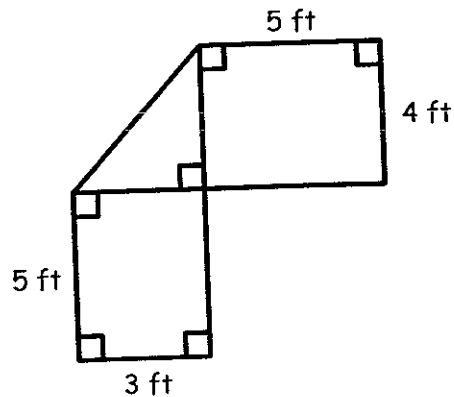
41 ft^2

$A = H \times B \div 2$

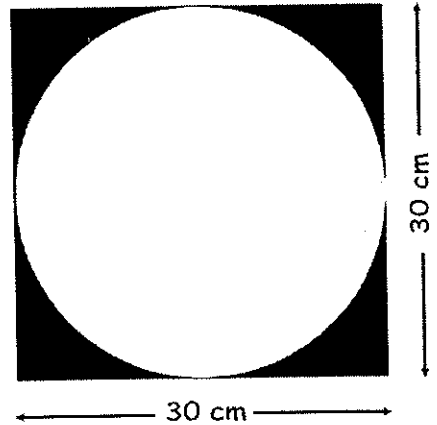
$A = 4 \times 3 \div 2$

$A = 6 \text{ ft}^2$

2.



To make a baking pan, a tinsmith is planning to cut the largest possible circular disk from a square sheet of tin that measures 30 cm on each side. What will be the area of the leftover scraps of tin?



$$\square A = bh$$

$$\bigcirc A = \pi \cdot r^2$$



$$A = b \cdot h$$

$$A = 30 \cdot 30$$

$$A = 900 \text{ cm}^2$$

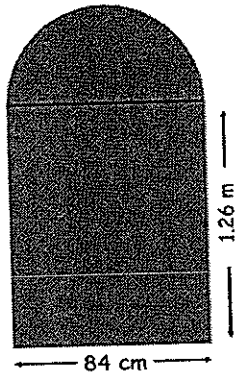
$$\begin{array}{r} 715 \\ \times 15 \\ \hline 175 \\ + 150 \\ \hline 225 \end{array}$$

$$\begin{array}{l} \bigcirc \\ A = \pi \cdot r^2 \\ A = 3.14 \cdot 15^2 \\ A = 706.5 \text{ cm}^2 \end{array}$$

$$\begin{array}{r} 8900.00 \\ - 706.5 \\ \hline 193.5 \text{ cm}^2 \end{array}$$

$$\begin{array}{r} 3.14 \\ \times 225 \\ \hline 11570 \\ 16280 \\ \hline 70650 \end{array}$$

4. A Norman window is shaped like a rectangle that is surmounted by a semicircle. What is the area in square centimeters of a Norman window with the dimensions shown?



$$1.26 \text{ m} = 126 \text{ cm}$$



$$A = bh$$

$$A = (84 \text{ cm})(126 \text{ cm})$$

$$A = 10584 \text{ cm}^2$$



$$A = \frac{1}{2} \pi r^2$$

$$A = \frac{1}{2} (3.14) (42^2)$$

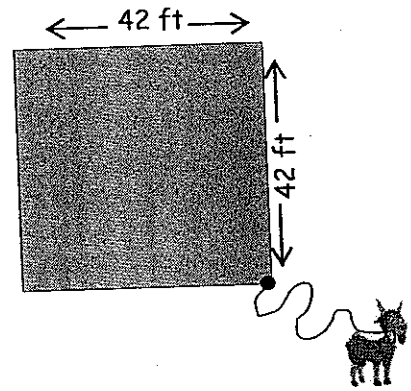
$$A = \frac{1}{2} (3.14) (1764)$$

$$A = \frac{1}{2} (5538.96)$$

$$A = 2769.48 \text{ cm}^2$$

$$\text{Total } A = 2769.48 \text{ cm}^2 + 10584 \text{ cm}^2 = 13353.48 \text{ cm}^2$$
$$= 1.34 \text{ m}^2$$

A square barn measures 42 feet on each side. A goat is tethered outside by a rope that is attached to one corner of the barn, as shown in the sketch.



- Suppose that the length of the rope is 28 feet. On how many square feet of land is the goat able to graze?
- Suppose that the rope is made twice as long as in part a. On how many feet of land is the goat now able to graze?

A.

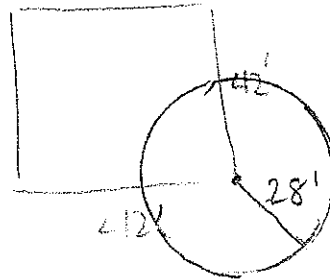
$$A = \frac{3}{4} \pi r^2$$

$$A = \frac{3}{4} (3.14) (28^2)$$

$$A = \frac{3}{4} (3.14) (784)$$

$$A = 1846.32 \text{ ft}^2$$

$$A \approx \boxed{1846 \text{ ft}^2}$$



B.

$$A = \frac{3}{4} \pi r^2$$

$$A = \frac{3}{4} (3.14) (56^2)$$

$$A = \frac{3}{4} (3.14) (3136)$$

$$A = 7385.28 \text{ ft}^2$$

$$A \approx \boxed{7385 \text{ ft}^2}$$

$$A = \frac{1}{4} \pi r^2$$

$$A = \frac{1}{4} (3.14) (14^2)$$

$$A = \frac{1}{4} (3.14) (196)$$

$$A = 153.86 \text{ ft}^2$$

$$A \approx \boxed{154 \text{ ft}^2}$$

$$A = 7385 + 154 + 154 = \boxed{7693 \text{ ft}^2}$$

