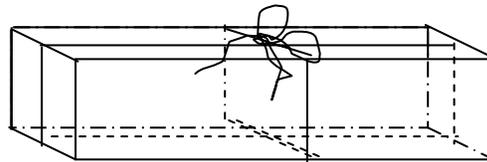


Perimeter Matters

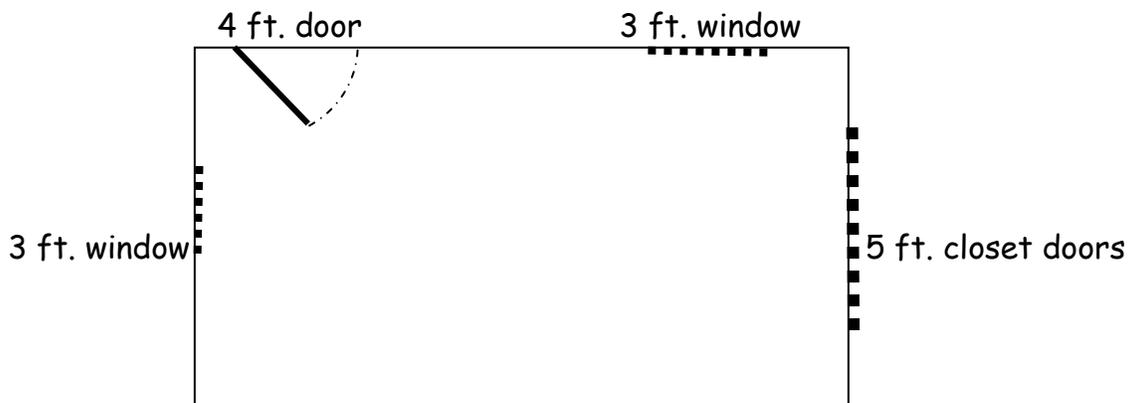
1. Marta wants to tie a ribbon around the sides of a hexagonal box and then tie a bow. Each side of the box is 4 inches long. She needs 14 inches for the bow. Is one yard of ribbon enough? Explain. Then state exactly how long the ribbon must be.

2. Caryn needs to ship a box that is 14" high, 12 inches deep and 24 inches long. After sealing the box, she tied it with twine as shown:



How much twine does she need if the bow uses 12 inches of twine?

2. Shawndolyn is remodeling her daughter's room. She plans to put a border around the room at waist height and another border around the ceiling. The diagram shows the layout of the 12' X 8' room. There will be no gaps in the ceiling border. How many feet of border does Shawndolyn need?

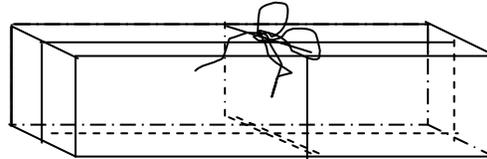


Perimeter Matters (answers)

1. Marta wants to tie a ribbon around the sides of a hexagonal box and then tie a bow. Each side of the box is 4 inches long. She needs 14 inches for the bow. Is one yard of ribbon enough? Explain. Then state exactly how long the ribbon must be.

The box has six sides, each 4 inches long. Therefore, Marta needs $6 \times 4 = 24$ inches of ribbon to go around the box. The bow takes 14 inches. So, Marta needs $24 + 14 = 38$ inches. One yard or 36 inches of ribbon is not enough. Marta must have at least 38 inches.

2. Caryn needs to ship a box that is 14" high, 12 inches deep and 24 inches long. After sealing the box, she tied it with twine as shown:

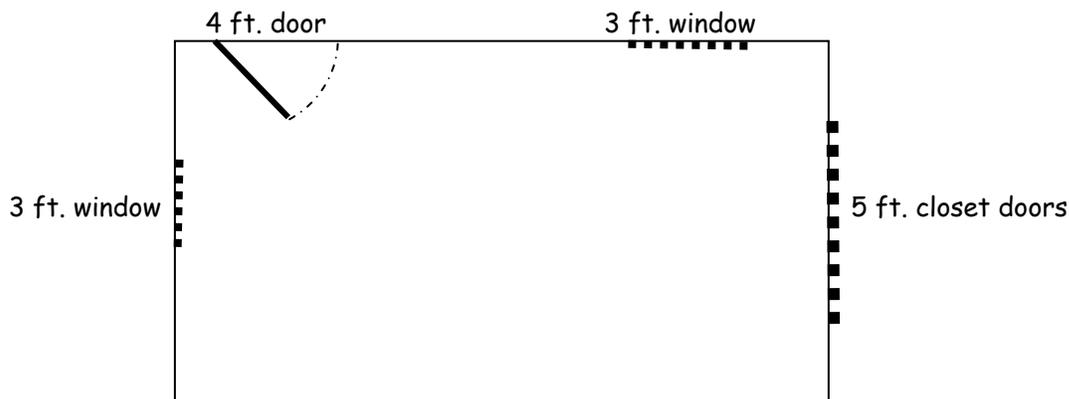


How much twine does she need if the bow uses 12 inches of twine?

She needs 140 inches of twine. The twine is used along the height 4 times, along the depth 2 times, and along the length 2 times. The bow takes 12 inches. The amount of twine needed = $4(14) + 2(12) + 2(24) + 12 = 140$

2. Shawndolyn is remodeling her daughter's room. She plans to put a border around the room at waist height and another border around the ceiling. The diagram shows the layout of the 12' X 8' room. There will be no gaps in the ceiling border. How many feet of border does Shawndolyn need?

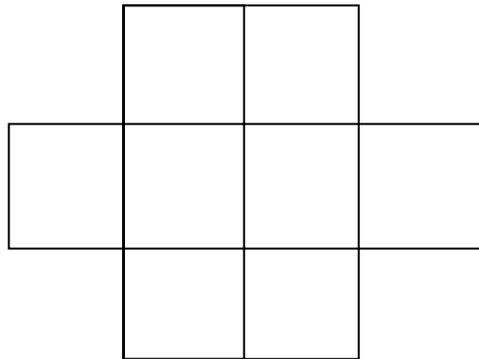
The border around the ceiling takes $2(12) + 2(8) = 24 + 16 = 40$ feet.
The waist high border takes $12 + (8 - 5) + (12 - 3 - 4) + (8 - 3) = 12 + 3 + 5 + 5 = 25$ feet.
Shawndolyn needs $40 + 25$ or 65 feet of the border.



Critical thinking Puzzles

Letters in the Mailboxes

The mailboxes for the residents of Sunny Side Apartments are mounted as the drawing below shows.



The residents' last names start with consecutive letters of the alphabet: Abbott Baker

Czaia Duiski

Enzio Francavilla

Gilbert Honore

Their mailboxes are arranged so that the letters identifying the owner of the mail in the box, A, B, C, D, E, F, G, and H, do not touch side to side, up and down, or corner to corner.

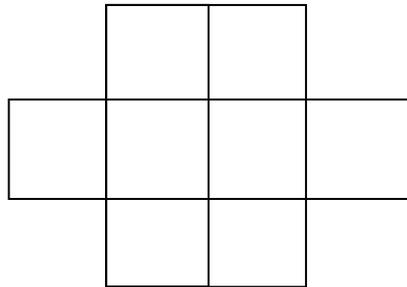
Label the mailboxes.

Is it possible to label the mailboxes another way or will the postmaster be sure to deliver mail to the correct resident?

Critical thinking Puzzles

Letters in the Mailboxes (answer)

The mailboxes for the residents of Sunny Side Apartments are mounted as the drawing below shows.



The residents' last names start with consecutive letters of the alphabet:

Abbott	Baker
Czaia	Duiski
Enzio	Francavilla
Gilbert	Honore

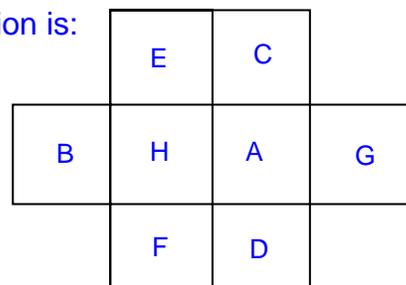
Their mailboxes are arranged so that the letters identifying the owner of the mail in the box, A, B, C, D, E, F, G, and H, do not touch side to side, up and down, or corner to corner.

Label the mailboxes.

Hint: Use eight lettered cards to arrange instead of writing and erasing. Be sure to skip over both before and after each letter is placed. Students who have practice with logic puzzles should use the first and last in the middle boxes

Is it possible to label the mailboxes another way or will the postmaster be sure to deliver mail to the correct resident?

One possible solution is:



Others exist, so the boxes must be labeled for the postmaster to deliver mail to the correct resident.

Designing an Inlaid Table Top

Lavarus is building an accent table that will have a square top with inlaid ceramic tiles. He has 5 tiles in each of 5 different colors, red, blue, green, yellow and brown.

His instructor challenged him to arrange the tiles in a design so that each row and column contains exactly one tile of each color and so that two tiles of the same color do not touch diagonally. The first row he laid was red, blue, green, yellow, and brown.

Show two different ways he could arrange the rest of the design. Color them. Is there another way?

T
a
b
L
E

T
o
p

1

RED	BLUE	GREEN	YELLOW	BROWN

T
a
b
L
E

T
o
p

2

RED	BLUE	GREEN	YELLOW	BROWN

T
a
b
L
E

T
o
p

3

RED	BLUE	GREEN	YELLOW	BROWN

Designing an Inlaid Table Top

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Show two different ways he could arrange the rest of the design. Color them. Is there another way?

T
a
b
l
e

T
o
p

1

Red	Blue	Green	Yellow	Brown
Yellow	Brown	Red	Blue	Green
Blue	Green	Yellow	Brown	Red
Brown	Red	Blue	Green	Yellow
Green	Yellow	Brown	Red	Blue

T
a
b
l
e

T
o
p

2

Red	Blue	Green	Yellow	Brown
Green	Yellow	Brown	Red	Blue
Brown	Red	Blue	Green	Yellow
Blue	Green	Yellow	Brown	Red
Yellow	Brown	Red	Blue	Green

T
a
b
l
e

T
o
p

3

Red	Blue	Green	Yellow	Brown
Brown	Yellow	Red	Blue	Green

I did not find another way.