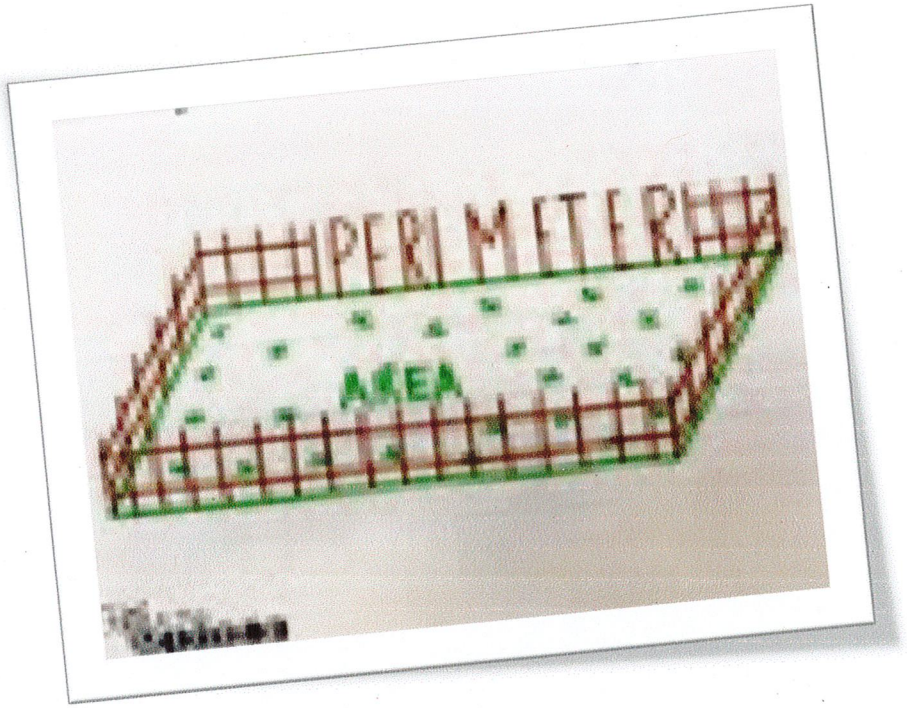
ECS Gr. 4 At-Home Instruction
Round 4
Math: Area & Perimeter

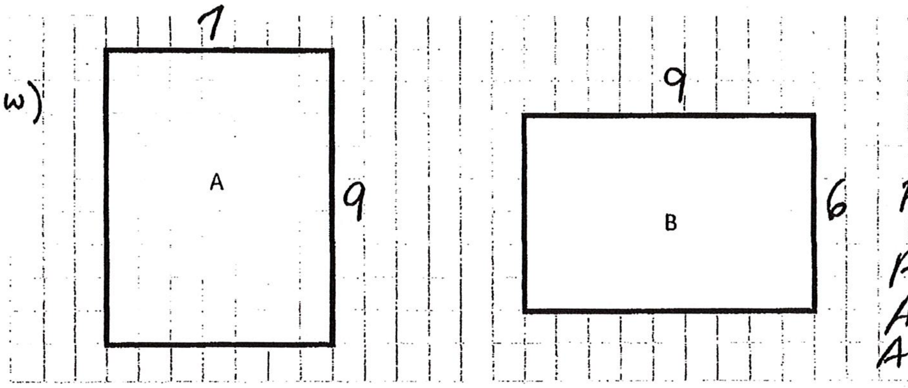


Answer Set

- Problem Set
- Exit Tickets
- HW Sets

Name ______________________ Date ____________

1. Determine the perimeter and area of rectangles A and B.



P = 2×(l+w)
P = 2×16
P = 32

A = l×w
A = 7×9
A = 63

P = 2×(l+w)
P = 2×15
P = 30

A = l×w
A = 9×6
A = 54

A = 63 square units = 63 unit² = 63 sq units (not expected for 4th grade)

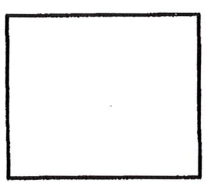
P = 32 units

A = 54 square units

P = 30 units

2. Determine the perimeter and area of each rectangle.

a.

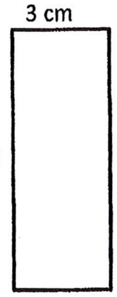


P = 2×(5+6)
P = 2×11
P = 22
A = l×w
A = 6×5
A = 30

P = 22 cm

A = 30 sq. cm   30 cm²

b.



P = 2×(8+3)
P = 2×(11)
P = 22

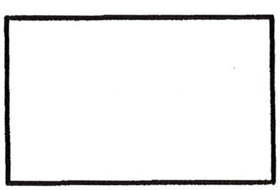
P = 22 cm

A = 24 sq. cm

A = l×w
A = ~~8×3~~ 3×8
A = 24

3. Determine the perimeter of each rectangle. (Note - the × is done with repeated addition)

a.



P = 2×(l+w)
P = 2×265
P = 530

166 + 99 = 265

265 + 265 = 530

P = 530 m

b.

150 cm + 75 cm = 225

P = 2×(l+w)
P = 2×225
P = 450

450 cm or

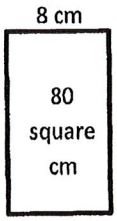
P = 4 m 50 cm

225 + 225 = 450

Answers to p. 7 of student packet

4. Given the rectangle's area, find the unknown side length.

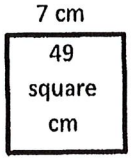
a.



$A = l \times w$
$80 = 8 \times x$
$x = 10$

x = 10 cm

b.

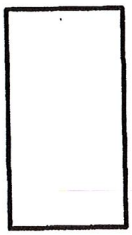


$A = l \times w$
$49 = 7 \times x$
$x = 7$

x = 7 cm

5. Given the rectangle's perimeter, find the unknown side length. *Note the division involved in this problem.

a. P = 120 cm

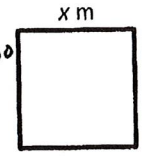


$P = 2L + 2w$
$2L = 20 + 20 = 40$
$120 = 40 + 2w$
$80 = 2w$

$120 - 40 = 80$

x = 40 cm
$80 \div 2 = 40$

b. P = 1,000 m



$P = 2L + 2w$
$2w = 250 + 250 = 500$
$1000 = 2L + 500$
$500 = 2L$

$1,000 - 500 = 500$

x = 250 m
$500 \div 2 = 250$

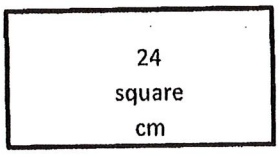
6. Each of the following rectangles has whole number side lengths. Given the area and perimeter, find the length and width.

a. P = 20 cm

$20 \div 2 = 10$ (another solution in the module)

$P = 2(l + w)$
$10 = l + w$
$10 = 6 + 4$

l = 6 cm



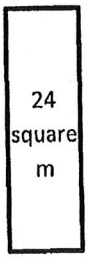
w = 4 cm

b. P = 28 m

$28 \div 2 = 14$

$P = 2(l + w)$
$14 = l + w$
$14 = 2 + 12$

w = 12 m



l = 2 m

Area = 24
$A = l \times w$

w	l
1	24
2	12
3	8
4	6

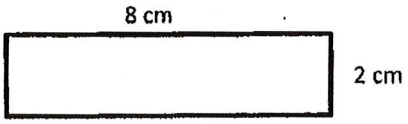
w	l
10	0
9	1
8	2
7	3
(6	4) = 24
5	5 = 25

Answers to p. 8 of student packet

Name _____ Date _____

1. Determine the area and perimeter of the rectangle.

W	L
20	0



$A = L \times W$

8×2

$A = 16 \text{ cm}^2$

$P = 2(L + W)$

$P = 2(8 + 2)$

$P = 2(10)$

$P = 20 \text{ cm}$

8 + 8 + 2 + 2

16 + 4

P = 20

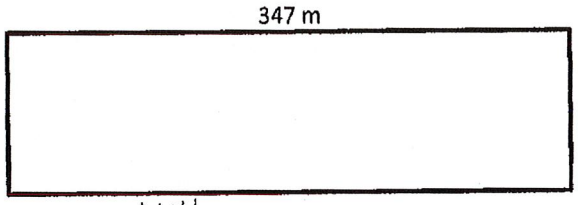
2. Determine the perimeter of the rectangle.

$P = 2(L + W)$

$P = 2(347\text{m} + 99\text{m})$

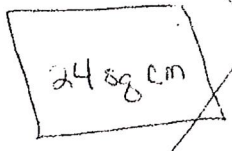
$2(446 \text{ m})$

$P = 892 \text{ m}$



446
+ 446
892 m

3. A rectangle with whole number side lengths has an area of 24 square centimeters and a perimeter of 22 centimeters. Find the length and width of the rectangle.



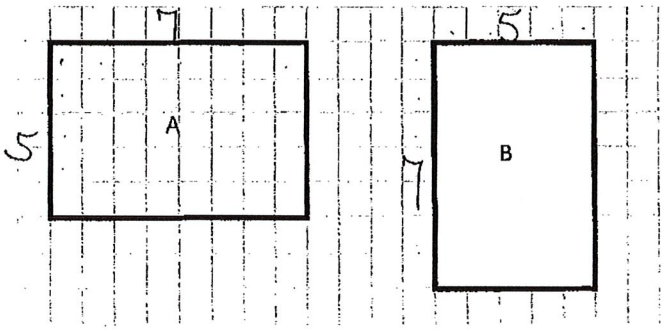
P

division not exposed to yet

Answers to p. 9 of student packet.

Name _____ Date _____

1. Determine the perimeter and area of rectangles A and B.

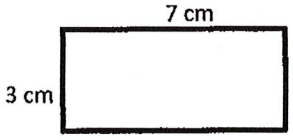


A = 7 X 5 = 35 sq units
P = 2(7+5) = 24 units

A = 5 X 7 = 35 sq units
P = 2(5+7) = 24 units

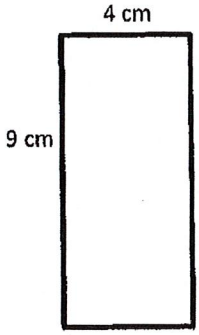
2. Determine the perimeter and area of each rectangle.

a.



P = 2(7+3) = 20 cm
A = 7 X 3 = 21 sq cm

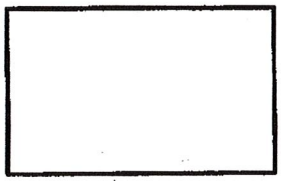
b.



P = 2(4+9) = 26 cm
A = 4 X 9 = 36 sq cm

3. Determine the perimeter of each rectangle.

a.



149 + 76 = 225
225 + 225 = 450

P = 2(149+76m) = 450 m

b.

Answer is wrong

2m = 200cm
+ 10cm
210cm

210 + 45 = 255cm = 2m 55cm

P = ~~255cm or~~ 2m ~~55~~cm

Answers to p. 10 of student packet

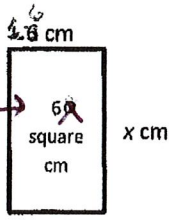
Answer

P = 2 x (l + w)
P = 2 x (210 cm + 45 cm)
P = 2 x 255 cm
P = 510 cm

4. Given the rectangle's area, find the unknown side length.

*Note error on 4a. should be 60 square cm

a.



Question doesn't match. They used 60

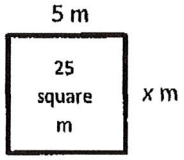
$A = l \times w$

$60 = 6 \times x$

$x = 10$

$x =$ 10 cm ← Answer

b.



$A = l \times w$

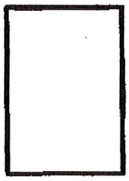
$25 = 5 \times x$

$x = 5$

$x =$ 5 m

5. Given the rectangle's perimeter, find the unknown side length. *Note 5 and 6 involve division so we use later in module after division is introduced.

a. P = 180 cm



$P = 2l + 2w$

$180 = 80 + 2w$

$100 = 2w$

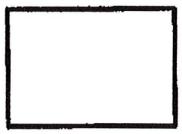
$100 \div 2 = 50$

$180 - 80 = 100$

$2L = 40 + 40 = 80$

$x =$ 50 cm

b. P = 1,000 m



$P = 2L + 2w$

$1{,}000 = 2L + 300$

$1{,}000 - 300 = 700$

$700 = 2L$

$2w = 150 + 150 = 300$

$x =$ 350 m

$700 \div 2 = 350$

6. Each of the following rectangles has whole number side lengths. Given the area and perimeter, find the length and width.

a. A = 32 square cm

P = 24 cm

$24 \div 2 = 12$

$P = 2(l + w)$

$P = 24 \div 2$

$12 = l + w$

$12 = 8 + 4$

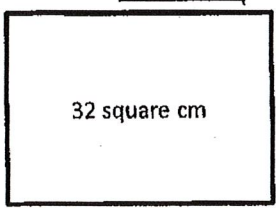
w	l
12	0
11	1
10	2
9	3
8	4

$A = 32$

$A = l \times w$

$A = 8 \times 4$

$l =$ 8 cm



$w =$ 4 cm

b. A = 36 square m

P = 30 m

$30 \div 2 = 15$

$P = 2(l + w)$

$15 = l + w$

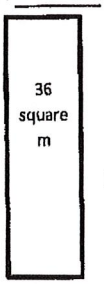
$15 = 12 + 3$

$w =$ 3

$A = 36$

$A = l \times w$

w	l
1	36
2	18
3	12



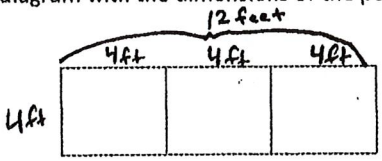
$l =$ 12

Answers: p.11 of student packet

Name _____ Date _____

1. A rectangular porch is 4 feet wide. It is 3 times as long as it is wide.

   a. Label the diagram with the dimensions of the porch.

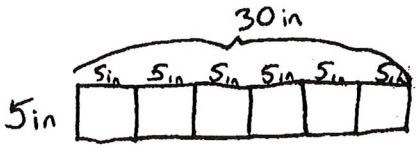


   b. Find the perimeter of the porch.

$P = 2 \times (l + w)$ $P = 32$ feet
$P = 2 \times (4 + 12)$
$= 2 \times 16$ $16 + 16 = 32$
$= 32$

2. A narrow rectangular banner is 5 inches wide. It is 6 times as long as it is wide.

   a. Draw a diagram of the banner and label its dimensions.



   b. Find the perimeter and area of the banner.

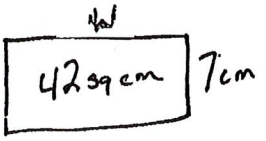
$P = 2(l + w)$ $P = 70$ in
$= 2(30 + 5)$
$= 2(35)$ $35 + 35 = 70$
$= 70$

$A = l \times w$ (Note the multiplication)
$= 30 \times 5$
$= 3 \text{ tens} \times 5$
$= 15 \text{ tens} = 150$

Answers to p. 16 of student packet

3. The area of a rectangle is 42 square centimeters. Its length is 7 centimeters.

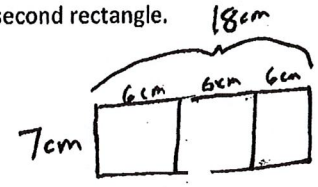
   a. What is the width of the rectangle?



$A = l \times w$
$42 = 7 \times w$
$42 = 7 \times 6$

width = 6 cm

   b. Charlie wants to draw a second rectangle that is the same length but is 3 times as wide. Draw and label Charlie's second rectangle.



   c. What is the perimeter of Charlie's second rectangle?

$P = 2(l+w)$
$P = 2(7+18)$
$= 2(25)$
$= 50$

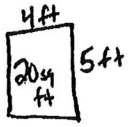
$18 + 7 = 25$
$25 + 25 = 50$

P = 50 cm

4. The area of Betsy's rectangular sandbox is 20 square feet. The longer side measures 5 feet. The sandbox at the park is twice as long and twice as wide as Betsy's.

   a. Draw and label a diagram of Betsy's sandbox. What is its perimeter?

A = 20 sq ft P = 18 feet.

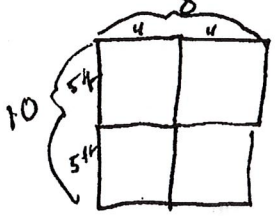


$P = 2 \times (l+w)$
$= 2 \times (9)$
$= 18$

$A = l \times w$
$20 \div 5 = w$
$w = 4$ ft

* Relationship between × and ÷

   b. Draw and label a diagram of the sandbox at the park. What is its perimeter?



$P = 2 \times (l+w)$
$= 2 \times (10+8)$
$= 2 \times 18$
$= 36$

$18 + 18 = 36$

P = 36 ft

Answers to p. 17 of student packet

c. What is the relationship between the two perimeters?

The park's sandbox has a perimeter that is 2 times as large as Betsy's sandbox.

d. Find the area of the park's sandbox using the formula $A = l \times w$.

$A = l \times w$
$A = 8 \times 10$
$= 80$ sq ft

e. The sandbox at the park has an area that is how many times that of Betsy's sandbox?

It has 4 times the area of Betsy's sandbox.
$20 \times 4 = 80$

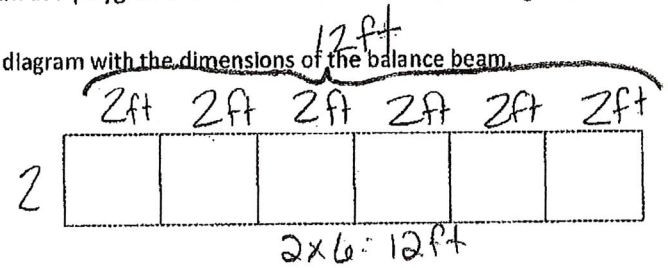
f. Compare the way the perimeter changed with the way the area changed between the two sandboxes. Explain what you notice using words, pictures, or numbers.

Answers to p. 18 of student packet

Name _____ Date _____

1. A balance beam at a playground is 2 feet wide. It is 6 times as long as it is wide.

   a. Label the diagram with the dimensions of the balance beam.



   b. Find the perimeter of the balance beam.

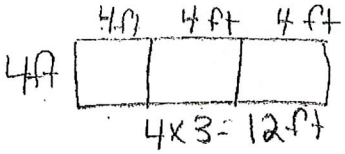
$P = 2x(l+w)$
$P = 2x(2+12)$
$= 2x14$
$= 28$

$14 + 14 = 28$

$P = 28$ feet

2. A blanket is 4 feet wide. It is 3 times as long as it is wide.

   a. Draw a diagram of the blanket and label its dimensions.



   b. Find the perimeter and area of the blanket.

$P = 2x(l+w)$
$P = 2x(12+4)$
$P = 2x16$
$P = 32$ ft

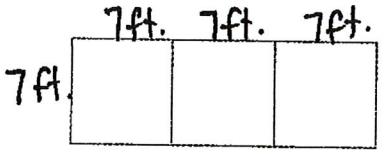
$A = l \times w$
$A = 12\text{ft.} \times 4\text{ft.}$
$A = 48\text{ft.}^2$

Answers to p. 19 of student packet

Name KEY Date _____

1. A rectangular pool is 7 feet wide. It is 3 times as long as it is wide.

   a. Label the diagram with the dimensions of the pool.



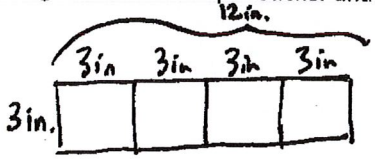
7 x 3 = 21 ft.

   b. Find the perimeter of the pool.

p = 2x (l+w)
p = 2x (21+7)
p = 2x28
p = 56ft.

2. A rectangular bumper sticker is 3 inches long. It is 4 times as wide as it is long.

   a. Draw a diagram of the bumper sticker and label its dimensions.



3 x 4 = 12 inches

   b. Find the perimeter and area of the bumper sticker.

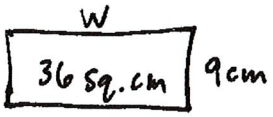
p = 2x (l+w)
p = 2x (12+3)
p = 2x15
p = 30 in.

A = lxw
A = 3x12
A = 36 inches^2

Answers to p. 20 of student packet.

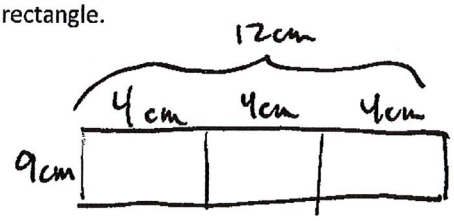
3. The area of a rectangle is 36 square centimeters and its length is 9 centimeters.

   a. What is the width of the rectangle?



$A = l \times w$
$36 = 9 \times w$
$4 = w$
$36 \div 9 = 4$

   b. Elsa wants to draw a second rectangle that is the same length but is 3 times as wide. Draw and label Elsa's second rectangle.



   c. What is the perimeter of Elsa's second rectangle?

$P = 2 \times (l + w)$
$P = 2 \times (12 + 9)$
$P = 2 \times (21)$
$P = 42$ cm

$21 \times 2 = 42$ or $21 + 21 = 42$

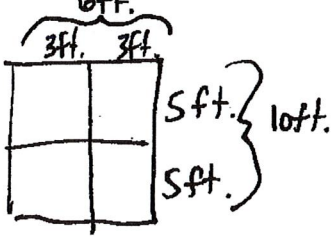
4. The area of Nathan's bedroom rug is 15 square feet. The longer side measures 5 feet. His living room rug is twice as long and twice as wide as the bedroom rug.

   a. Draw and label a diagram of Nathan's bedroom rug. What is its perimeter?

$P = 2 \times (l + w)$
$P = 2 \times (5 + 3)$
$P = 2 \times 8$
$P = 16$ ft.

$A = l \times w$
$15 = 5 \times w$
$3 = w$
$15 \div 5 = 3$

   b. Draw and label a diagram of Nathan's living room rug. What is its perimeter?



$P = 2 \times (l + w)$
$P = 2 \times (10 + 6)$
$P = 2 \times (16$
$P = 32$ ft.

$16 + 16 = 32$

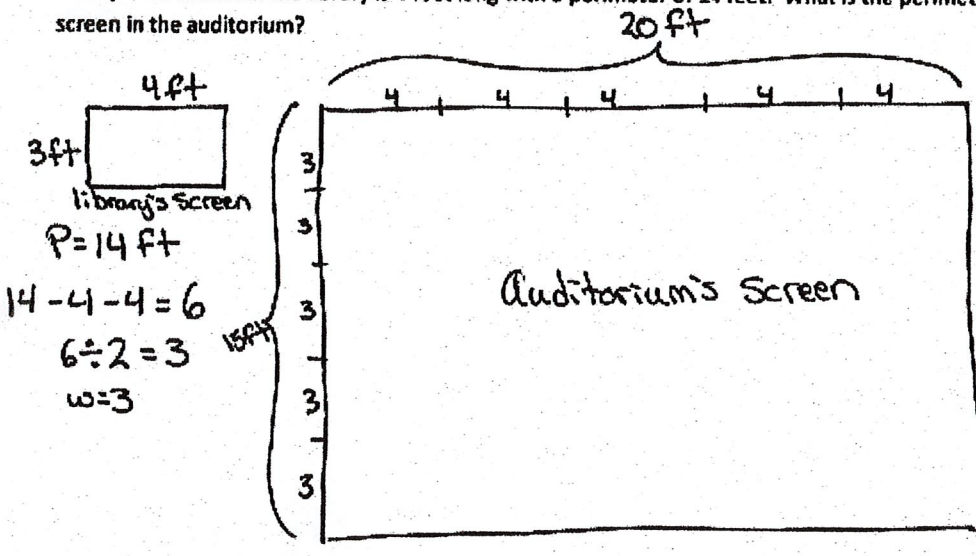
Answers to p. 21 of student packet

Lesson 3 Problem Set

Name Jack Date _____

Solve the following problems. Use pictures, words, or diagrams to help you solve.

1. **The projection screen in the school auditorium is 5 times as long and 5 times as wide as the screen in the library. The screen in the library is 4 feet long with a perimeter of 14 feet. What is the perimeter of the screen in the auditorium?**



P = 14 ft

14 - 4 - 4 = 6

6 ÷ 2 = 3

w = 3

P = 2x (l+w)

= 2x (20+15)

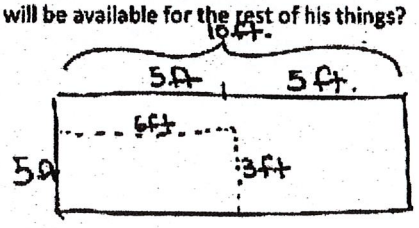
= 2x 35

= 70

P = 70ft

The perimeter of the screen in the auditorium is 70 ft.

2. **The width of David's tent is 5 feet. The length is twice the width. David's rectangular air mattress measures 3 feet by 6 feet. If David puts the air mattress in the tent, how many square feet of floor space will be available for the rest of his things?**



Tent

A = l x w

= 10 x 5

= 50

A = 50 square ft.

air mattress

A = l x w

= 6 x 3

= 18

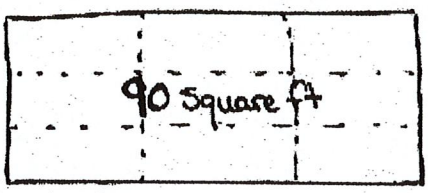
A = 18 square ft.

$$\begin{array}{r} {}^{4}\cancel{5}\,{}^{10}\cancel{0} \\ -\ 18 \\ \hline 32 \end{array}$$

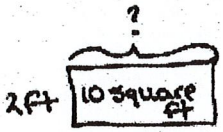
32 square feet of floor space will be available.

Answers to p. 25 of student packet - Q#s 1-2

3. Jackson's bedroom has an area of 90 square feet. The area of his bedroom is 9 times that of his closet. If the closet is 2 feet wide, what is its length?



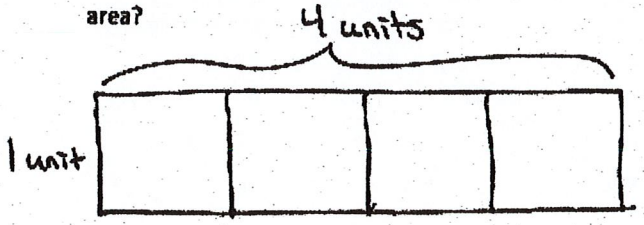
Area of closet x 9 = Area of bedroom
Area of closet x 9 = 90
90 ÷ 9 = 10
Area of closet = 10 square ft



A = l x w
10 = l x 2
l = 5

The length of the closet is 5 feet.

4. The length of a rectangular deck is 4 times its width. If the deck's perimeter is 30 feet, what is the deck's area?



P = 2x(l+w)
= 2 x (4+1)
= 2 x 5
= 10 units

10 units = 30 ft
1 unit = 3 ft

w = 3 ft
l = 12 ft
A = 12 ft x 3 ft
= 36 square feet

The deck's area is 36 square feet.

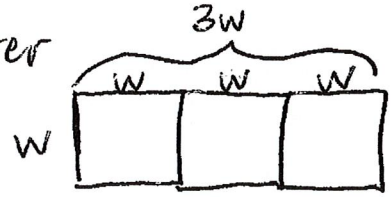
Answers to p. 25, #'s 3-4.

Name _____ Date _____

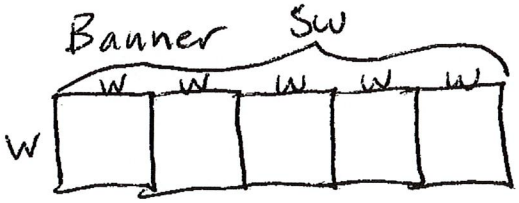
Solve the following problem. Use pictures, words, or diagrams to help you solve.

1. A poster is 3 times as long as it is wide. A banner is 5 times as long as it is wide. Both the banner and the poster have perimeters of 24 inches. What are the length and width of the poster and the banner?

Poster



Banner



L+W = 4W

P = 2x (L+W)

24 = 2x 4W

24 = 8W

24 ÷ 8 = 3

3 = W

9 = L

L+W = 6W

P = 2x(L+W)

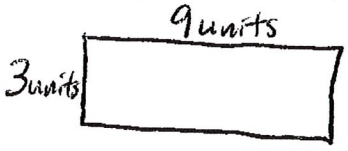
24 = 2x6W

24 = 12W

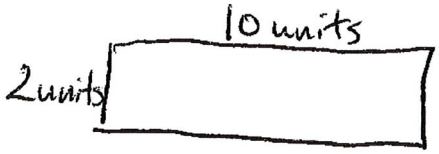
2 = W

10 = L

Poster



Banner

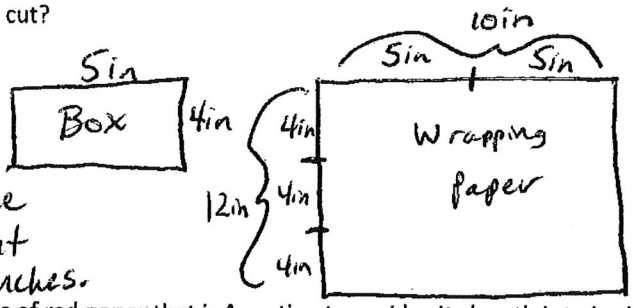


Answer to p. 26 of student packet

Name _____ Date _____

Solve the following problems. Use pictures, words, or diagrams to help you solve.

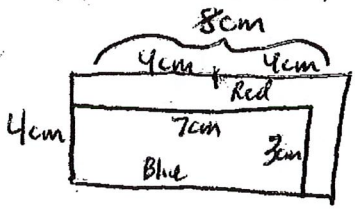
1. Katie cut out a piece of wrapping paper that was 2 times as long and 3 times as wide as the box that she was wrapping. The box was 5 inches long and 4 inches wide. What is the perimeter of the wrapping paper that Katie cut?



$P = 2x(l+w)$
$P = 2x(10+12)$
$P = 2x22$
$P = 44$ inches

The perimeter of the wrapping paper Katie cut was 44 inches.

2. Alexis has a piece of red paper that is 4 centimeters wide. Its length is twice its width. She glues a piece of blue paper on top of the red piece measuring 3 centimeters by 7 centimeters. How many square centimeters of red paper will be visible on top?



Red
$A = lxw$
$A = 4x8$
$A = 32cm^2$

Blue
$A = lxw$
$A = 3x7$
$A = 21cm^2$

$32 - 21 = 11cm^2$

$11 cm^2$ of red paper will be visible on top.

3. Brinn's kitchen has an area of 81 square feet. The kitchen is 9 times as many square feet as Brinn's pantry. If the pantry is 3 feet wide, what is the length of the pantry?

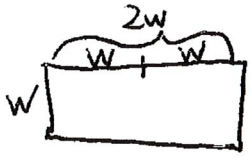
$81 \div 9 = 9$ sq.ft.

$A = lxw$
$9 sq.ft = L \times 3ft.$
$3ft = L$

$9 \div 3 = 3$

The length of Brinn's pantry is 3 feet.

4. The length of Marshall's poster is 2 times its width. If the perimeter is 72 inches, what is the area of the poster?



$L + w = 3w$
$P = 2x(l+w)$
$72in = 2x(3w)$
$72in = 6w$
$12in = w$
$24in = L$

$72 \div 6 = 12$

$A = lxw$
$A = 24in \times 12in$
$A = 288in^2$

$24 \times 12 = 288$

$2x4 = 8$
$2x20 = 40$
$10x4 = 40$
$10x20 = 200$
288

The area of Marshall's poster is $288 in^2$.

Answers to p. 27 of student packet