Area, Perimeter, Input and Output Review

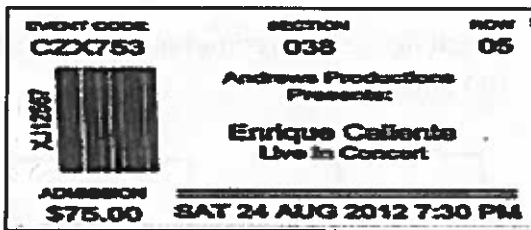1. If the input is 12, what is the output?

Input-Output Table

Input	Numerical Expression	Output
1	120 ÷ 1	1
2	120 ÷ 2	60
3	120 ÷ 3	40
4	120 ÷ 4	30

A. 10   B. 3   C. 132   D. 108

2. Use a ruler to measure the dimensions of the ticket below to the nearest centimeter.

EVENT CODE	SECTION	ROW
CZX753	038	05

Andrews Productions
Presents:

Enrique Caliente
Live In Concert

ADMISSION
$75.00   SAT 24 AUG 2012 7:30 PM

What is the perimeter of the ticket in centimeters?

A. 20 cm   C. 24 cm
B. 22 cm   D. 28 cm

3. Each number in Set A is paired with a number in Set B. The relationship for each pair of numbers is the same.

Set A	54	65	76
Set B	9	20	31

If the number in Set A is 84, how could you find its paired number in Set B.

A. Divide 84 by 6
B. Subtract 45 from 84
C. Multiply 84 by 9
D. Add 45 to 84

4. The math machine below changes entered numbers accourding to a rule.

Math Machine

33 → In [WWW] Out → 74
58 → In [WWW] Out → 99
46 → In [WWW] Out → 87
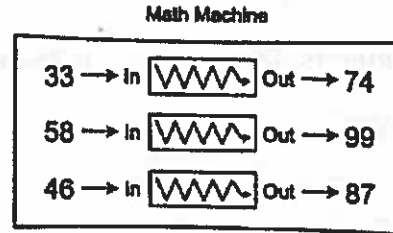
Based on the examples above, what does the math machine do to a number that is entered?

A. It multiplies the entered number by 2.
B. It adds 34 to the entered number.
C. It multiples the entered number by 3.
D. It adds 41 to the entered number.

5. A model of a tennis court is shown below.

36 ft
78 ft
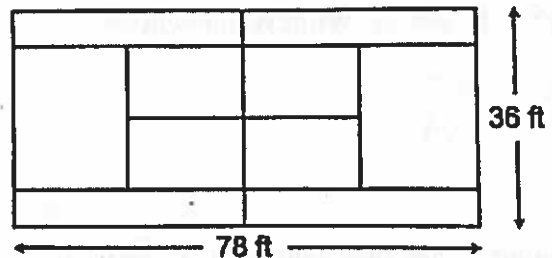
What is the area of the tennis court?

A. 228 sq. ft   C. 2,808 sq. ft.
B. 2,702 sq. ft.   D. 2,844 sq. ft

6. Jared has just moved into a house. He and his dad are going to plant squares of grass in the front yard. The front yard is 57 feet long and 83 feet wide. What is the total amount of grass that he needs for the front yard?

A. 4,731 sq. ft.   C. 140 sq. ft.
B. 75 sq. ft.   D. 26 sq. ft.

7. A model of a volleyball court is shown below.

6m

?

The width is 6 meters. The perimeter is 36 meters.

What is the length?

A. 30m C. 12m
B. 18m D. 24m

8. The area of the flag below is 48 sq. inches.

?

The length is 12 inches. What is the width?

A. 1 C. 2
B. 3 D. 4

9. When Xavier says a number, X, Zeke says a number using Z using a certain rule.

Xavier's Number (X)	Zeke's Number (Z)
25	5
40	8
65	13

Which describes the relationship in the table?

A. Z = X − 20 C. Z = X
B. Z = X + 15 D. Z = X x 10

10. Kendra and Ricky are playing a game with numbers. When Kendra says a number, Ricky says a number using a certain rule.

Kendra's Number	Ricky's Number
10	20
12	22
15	25
19	29

Which rule below does Ricky apply to each number that Kendra says?

A. Subtract 10
B. Multiply by 2
C. Add 10
D. Divide by 2

11. Which figure has perimeter that is less than 100 units?

A.
25 u

25 u

C.
25 u

30 u

B.
28 u

32 u

D.
20 u

25 u
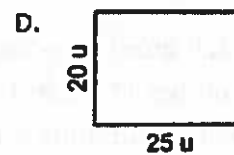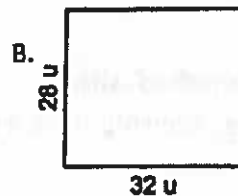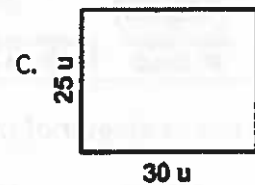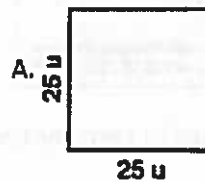
12. The table below shows the number of ounces equivalent to different number of packages. Which describes the relationship shown in the table?

Number of Packages	Number of Ounces
3	24
8	64
15	120
22	176

A. Number of packages x 8 = number of ounces

B. Number of packages ÷ 8 = number of ounces

C. Number of packages x 4 = number of ounces

D. Number of packages ÷ 4 = number of ounces

13. Nevaeh bought the stationary shown below.

12 in

8 in

What is the perimeter of the stationary in inches?

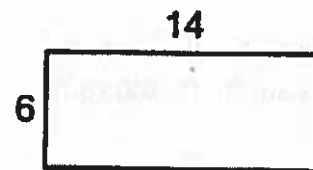A. 96 inches   C. 20 inches

B. 24 inches   D. 32 inches

14. Use a ruler to measure the dimensions of the figure below to the nearest centimeter.

What is the area of the figure in square centimeters?

A. 9 sq. cm   C. 18 sq. cm

B. 20 sq. cm   D. 14 sq. cm

15. Which equation can be used to find, A, the area of the rectangle?

14

6

A. 6 x 14   C. 6 + 14

B. 6 x 14 x 2   D. (6 + 14)

16. This is a Swiss flag. The area of the flag is 2,160 square inches.

What could be the dimensions of the flag?

A. Length: 18 Width: 30

B. Length: 36 Width: 6

C. Length: 36 Width: 60

D. Length: 180 Width: 3

17. Anna drew three rectangles. The first rectangle was 13 cm long and 9 cm wide. The second rectangle was 25 cm long and 15 cm wide. The third rectangle was 18 cm long and 10 cm wide. In square centimeters, how much greater was the area of the third rectangle than the area of the first rectangle?

A. 117 sq cm   C. 375 sq cm
B. 180 sq cm   D. 63 sq cm

18. Mr. Johns needs to replace carpet in his living room. The room is 18 feet long and 24 feet wide. How much carpet does he need to cover his living room floor?
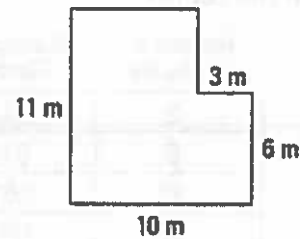
A. 84 sq. ft.   C. 42 sq. ft
B. 432 sq. ft.   D. 400 sq.ft

19. Find the area of both rectangles. What is the sum of the two areas of the rectangle?
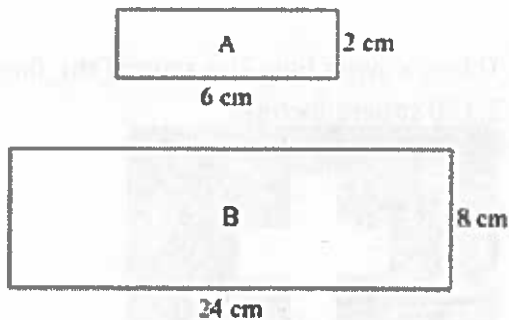
A. 12 sq. cm   C. 204 sq. cm.
B. 192 sq. cm.   D. 180 sq. ft

20. Calla drew this figure. It has a perimeter of 37 meters.

What is the length of the missing side?
A. 10 m   C. 7 m
B. 6 m   D. 30 m

21. The table shoes the number of eggs in different numbers of cartons.

Cartons of Eggs	2	3	4	5
Eggs	24	36	48	60

Which number sentence can be used to find the number of eggs in 12 cartons?
A. 12 + 60   C. 12 x12
B. 12 x 9   D. 60 ÷ 12

Name _____

✔ Unit 3 Assessment

Vocabulary

Choose the best term from the box.

1. A set of symbols that expresses a mathematical rule is

   called a _____ . (p. 422)

2. The _____ is the distance around a figure. (p. 421)

3. A _____ is an ordered set of numbers or objects. (p. 409)

Concepts and Skills

Use the rule to write the first ten terms in the pattern. Describe another
pattern in the numbers. ⬇ TEKS 4.5.B

4. Rule: Add 8.   First term: 7

_____

_____

5. Find a rule. Use your rule to write an
   expression. ⬇ TEKS 4.5.B

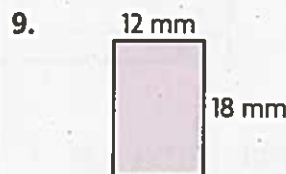| Input	t	5	6	7	8
Output	r	11	12	13	14

   Rule: _____

6. Use the rule to complete the input/output
   table. ⬇ TEKS 4.5.B

   Rule: The output is $a \times 5$.

Input	a	2	3	4	5
Output	b	10			

Find the perimeter and area of the rectangle or square. ⬇ TEKS 4.5.D

7.   6 in.
     6 in.

_____

8.   14 ft
   6 ft

_____

9.   12 mm
     18 mm

_____

10. Melissa wants to use a formula to find the perimeter of the figure below. Which formula should Melissa use? 🔹 TEKS 4.5.C

16 ft

16 ft
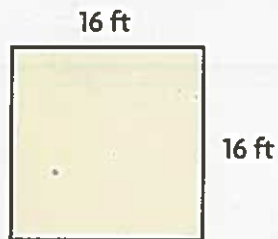
(A) $P = 2 + w + 2 + l$

(B) $P = l + w$

(C) $P = l \times w + l \times w$

(D) $P = 4s$

11. Martin buys four packs of baseball cards. Each pack has 12 cards in it. He then buys 3 more packs of cards with 8 cards in each pack. How many baseball cards did Martin buy? Use strip diagrams or equations to help you solve. 🔹 TEKS 4.5.A

(A) 96

(B) 72

(C) 27

(D) 66

12. Greg drew the sketch of his garden below. What is the area of Greg's garden? 🔹 TEKS 4.5.C

24 ft

12 ft

(A) 36 square feet

(B) 200 square feet

(C) 288 square feet

(D) 72 square feet

13. Pablo is using this strip diagram to solve a problem. Which equation is shown by the strip diagram? 🔹 TEKS 4.5.A

| 2,774 | 5,548 |

p
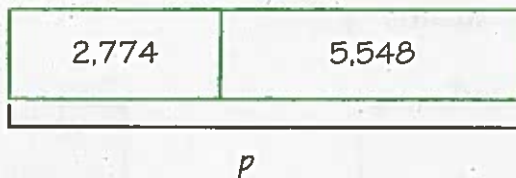
(A) $5,548 - 2,774 = p$

(B) $5,548 - p = 2,774$

(C) $2,774 + 5,548 = p$

(D) $2,774 + p = 5,548$

14. Marcel had 72 stickers. He gave 14 of his stickers to his sister. Then he gave 27 stickers to his brother. How many stickers does Marcel have left? Use strip diagrams or equations to help you solve. TEKS 4.5.A

(A) 58

(B) 31

(C) 45

(D) 113

15. Gabby wants to put a fence around the perimeter of her backyard. She drew a sketch of her backyard to determine the perimeter. What is the perimeter of Gabby's backyard? TEKS 4.5.D

47 ft

18 ft

(A) 130 ft   (C) 112 ft

(B) 611 ft   (D) 83 ft

16. Dan wants to find the area of his rectangular room so he will know how much carpet to buy. Which formula should he use to find the area of his room? TEKS 4.5.C

(A) $A = l + w$

(B) $A = l \times w$

(C) $A = (l \times w) + (l \times w)$

(D) $A = (2 \times w) + (2 \times l)$

17. Erica has 144 lollipops. She wants to put the lollipops into 8 different bags, with each bag having the same number of lollipops. Once Erica has all the lollipops in the 8 bags, she takes 2 lollipops out of each bag. How many lollipops are in each of the 8 bags? Use strip diagrams or equations to help you solve. TEKS 4.5.A

(A) 12   (C) 20

(B) 16   (D) 18

18. Karen walks 4 miles on Monday. For the next 7 days, she walks 2 miles each day. How many miles total does Karen walk during the 8 days? 🔹TEKS 4.5.B

(A) 18 miles   (C) 34 miles

(B) 14 miles   (D) Not here

19. During recess, Gretchen walked around the perimeter of the playground. When she got home, she drew a sketch of the playground to help her determine how far she walked during recess. What is the perimeter of the playground? 🔹TEKS 4.5.D

38 m

12 m
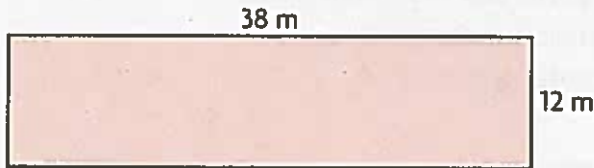
(A) 50 m   (C) 62 m

(B) 88 m   (D) 100 m

20. Van is buying new tires for some cars at his store. The input-output table below shows the number of cars, c, and the number of tires, t, on each car. Using the rule $c \times 4$, how many tires does Van have to buy to replace all the tires on 6 cars? 🔹TEKS 4.5.B

Input	Cars, c	1	2	3	4	5	6
Output	Tires, t	4	8				

(A) 12   (C) 24

(B) 16   (D) 20

21. An art museum adds 3 new pieces of art each month. If the museum starts with 75 pieces and the pattern continues, write the numbers in the pattern for the next 8 months. Describe another pattern in the numbers. 🔹TEKS 4.5.B

_____

_____

_____

Name __KEY__

Vocabulary

Choose the best term from the box.

Vocabulary
perimeter
area
formula
pattern
square unit (sq un)

1. A set of symbols that expresses a mathematical rule is

    called a __formula__ (p. 422)

2. The __perimeter__ is the distance around a figure. (p. 421)

3. A __pattern__ is an ordered set of numbers or objects. (p. 409)

Concepts and Skills

Use the rule to write the first ten terms in the pattern. Describe another
pattern in the numbers. ⬇ TEKS 4.5.B

4. Rule: Add 8.   First term: 7

    __7, 15, 23, 31, 39, 47, 55, 63, 71, 79__

5. Find a rule. Use your rule to write an
   expression. ⬇ TEKS 4.5.B

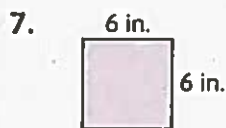| Input	t	5	6	7	8
Output	r	11	12	13	14

   Rule: __$t + 6 = r$__

6. Use the rule to complete the input/output
   table. ⬇ TEKS 4.5.B

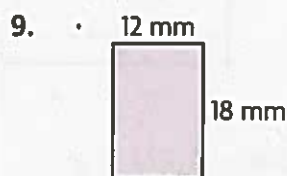   **Rule:** The output is $a \times 5$.

Input	a	2	3	4	5
Output	b	10	15	20	25

Find the perimeter and area of the rectangle or square. ⬇ TEKS 4.5.D

7. 6 in.

   6 in.

   $P = 24$ in
   $A = 36$ in^2

8. 14 ft

   6 ft

   $P = 40$ ft
   $A = 84$ ft^2

9. 12 mm

   18 mm

   $P = 60$ mm
   $A = 216$ mm^2

10. Melissa wants to use a formula to find the perimeter of the figure below. Which formula should Melissa use? 🔹 TEKS 4.5.C

16 ft

16 ft
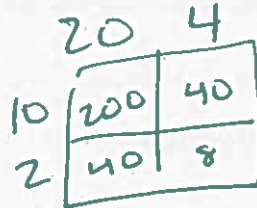
Ⓐ $P = 2 + w + 2 + l$

Ⓒ $P = l \times w + l \times w$

Ⓑ $P = l + w$

Ⓓ $P = 4s$

11. Martin buys four packs of baseball cards. Each pack has 12 cards in it. He then buys 3 more packs of cards with 8 cards in each pack. How many baseball cards did Martin buy? Use strip diagrams or equations to help you solve. 🔹 TEKS 4.5.A
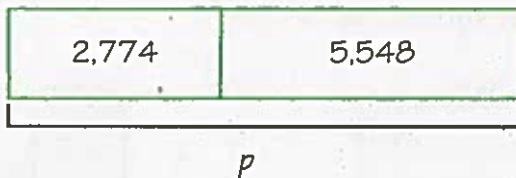
Ⓐ 96

Ⓒ 27

Ⓑ 72

Ⓓ 66
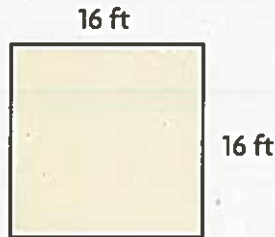
$4 \times 12 = 48$

$3 \times 8 = 24$

$\begin{array}{r} 48 \\ + 24 \\ \hline 72 \end{array}$

12. Greg drew the sketch of his garden below. What is the area of Greg's garden? 🔹 TEKS 4.5.C

24 ft

12 ft

	20	4
10	200	40
2	40	8

Ⓐ 36 square feet

Ⓒ 288 square feet

Ⓑ 200 square feet

Ⓓ 72 square feet

13. Pablo is using this strip diagram to solve a problem. Which equation is shown by the strip diagram? 🔹 TEKS 4.5.A

2,774	5,548

p

Ⓐ $5,548 - 2,774 = p$

Ⓒ $2,774 + 5,548 = p$

Ⓑ $5,548 - p = 2,774$

Ⓓ $2,774 + p = 5,548$

14. Marcel had 72 stickers. He gave 14 of his stickers to his sister. Then he gave 27 stickers to his brother. How many stickers does Marcel have left? Use strip diagrams or equations to help you solve. ⬇ TEKS 4.5.A

$$\begin{array}{r} 6\overset{\cdot}{7}\,'2 \\ -14 \\ \hline 58 \end{array} \qquad \begin{array}{r} 58 \\ -27 \\ \hline 31 \end{array}$$

- Ⓐ 58
- Ⓑ 31
- Ⓒ 45
- Ⓓ 113

15. Gabby wants to put a fence around the perimeter of her backyard. She drew a sketch of her backyard to determine the perimeter. What is the perimeter of Gabby's backyard? ⬇ TEKS 4.5.D

47 ft

18 ft

- Ⓐ 130 ft
- Ⓒ 112 ft
- Ⓑ 611 ft
- Ⓓ 83 ft

16. Dan wants to find the area of his rectangular room so he will know how much carpet to buy. Which formula should he use to find the area of his room? ⬇ TEKS 4.5.C

- Ⓐ $A = l + w$
- Ⓑ $A = l \times w$
- Ⓒ $A = (l \times w) + (l \times w)$
- Ⓓ $A = (2 \times w) + (2 \times l)$

17. Erica has 144 lollipops. She wants to put the lollipops into 8 different bags, with each bag having the same number of lollipops. Once Erica has all the lollipops in the 8 bags, she takes 2 lollipops out of each bag. How many lollipops are in each of the 8 bags? Use strip diagrams or equations to help you solve. ⬇ TEKS 4.5.A

$$\begin{array}{r} 18 \\ 8\overline{)144} \\ -8\downarrow \\ \hline 64 \\ -64 \\ \hline 0\checkmark \end{array}$$

- Ⓐ 12
- Ⓒ 20
- Ⓑ 16
- Ⓓ 18

18. ~~1st term~~ Karen walks 4 miles on Monday. For the next 7 days, she walks ~~rule~~ 2 miles each day. How many miles total does Karen walk during the 8 days? ➔ TEKS 4.5.B

4,6,8,10,12,14,16,18

- (A) 18 miles
- (C) 34 miles
- (B) 14 miles
- (D) Not here

19. During recess, Gretchen walked around the perimeter of the playground. When she got home, she drew a sketch of the playground to help her determine how far she walked during recess. What is the perimeter of the playground? ➔ TEKS 4.5.D

38 m

12 m
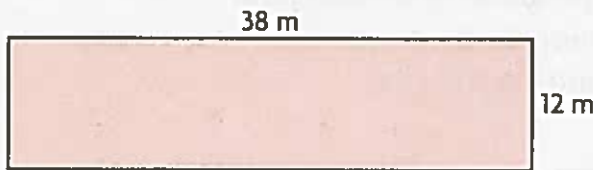
- (A) 50 m
- (C) 62 m
- (B) 88 m
- ● 100 m

20. Van is buying new tires for some cars at his store. The input-output table below shows the number of cars, c, and the number of tires, t, on each car. Using the rule $c \times 4$, how many tires does Van have to buy to replace all the tires on 6 cars? ➔ TEKS 4.5.B

Input ·	Cars, c	1	2	3	4	5	6
Output	Tires, t	4	8	12	16	20	24

- (A) 12
- ● 24
- (B) 16
- (D) 20

21. Rule: +3 An art museum adds 3 new pieces of art each month. If the museum starts with 75 pieces and the pattern continues, write the numbers in the pattern for the next 8 months. Describe another pattern in the numbers. ➔ TEKS 4.5.B
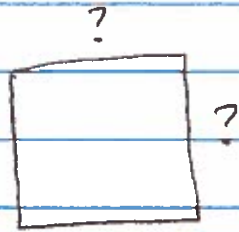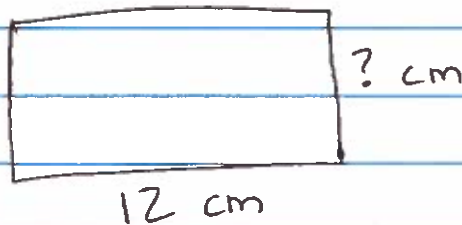
75, 78, 81, 84, 87, 90, 93, 96, 99

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1) The area of the square below is 81 m². What is the perimeter of the square?

?

?

2) The perimeter of this rectangle is 34 cm. If it is 12 cm in length, what is the width?

? cm

12 cm

3)

R	20	28	40	80
S	5	7	10	20

* If the next input is 96, what is the output?

$R \times 4 = S$ $R \div 4 = S$

$R - 15 = S$ $R + 15 = S$

1) The area is $81m^2$ so each side must be 9m.

$9 \times 4 = \underline{\underline{36m}}$

2) $P = 2L + 2w$ $L = 12$ so $2L = 24$

$34 - 24 = 10$ $2w = 10$ so width = $\underline{\underline{5cm}}$

3) R is the input and S is the output. We always start at the top and go down with horizontal tables. The rule is $\underline{\underline{R \div 4 = S}}$

☆ $96 \div 4 = \underline{\underline{24}}$