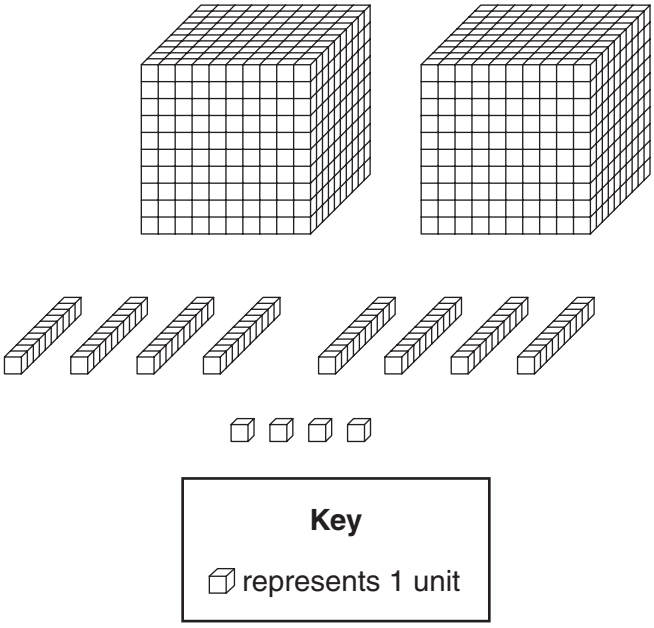
# New England Common Assessment Program

## Released Items
## 2005

## Grade 5
## Mathematics

# Mathematics

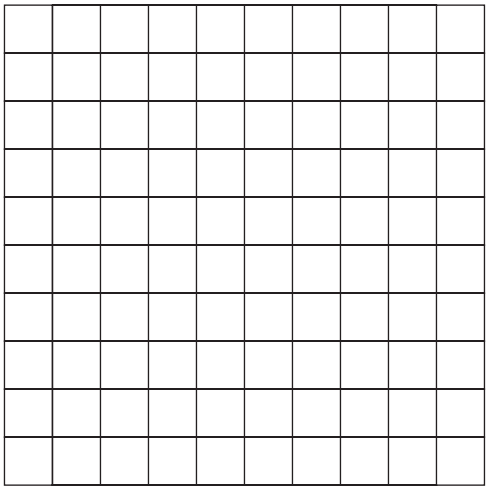
❶ Look at these blocks.




What number do the blocks represent?

A. 284
B. 2084
C. 2804
D. 2840

❷ The grid below represents one dollar.

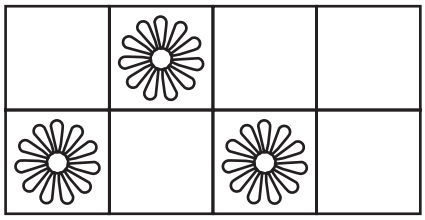


How many ☐ represent 6 dimes?

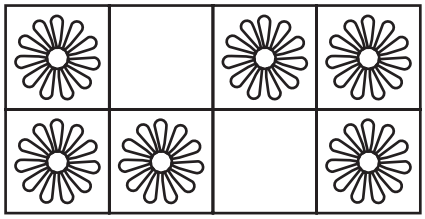
A. 66
B. 60
C. 16
D. 6

❸ In which design do $\frac{3}{5}$ of the tiles have a picture of a flower?

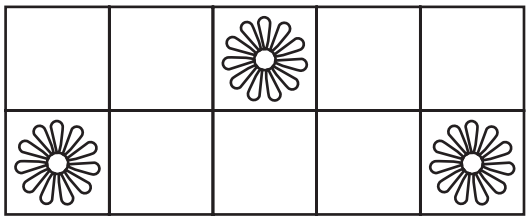
A.



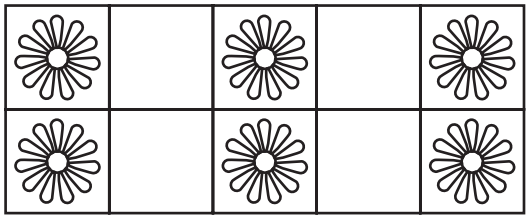
B.



C.



D.



❹ The students at Maple Grove School are selling flowers. Their goal is to sell 1500 flowers.

- On the first day, the students sold 547 flowers.
- On the second day, the students sold 655 flowers.

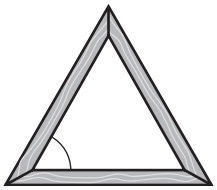
How many flowers must the students sell on the third day to meet their goal?

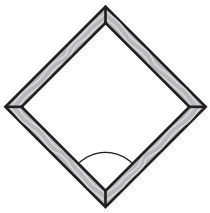
A. 298
B. 308
C. 1202
D. 2702

❺ The typical wingspan of a snowy owl is 4.8 feet. The typical wingspan of a bald eagle is 6.7 feet. How much longer is the typical wingspan of a bald eagle than the typical wingspan of a snowy owl?

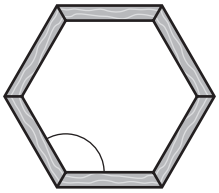
A. 10.5 feet
B. 2.9 feet
C. 2.1 feet
D. 1.9 feet

❻ Mr. Hanson makes frames. In which frame is the identified angle more than 90°?

A. 

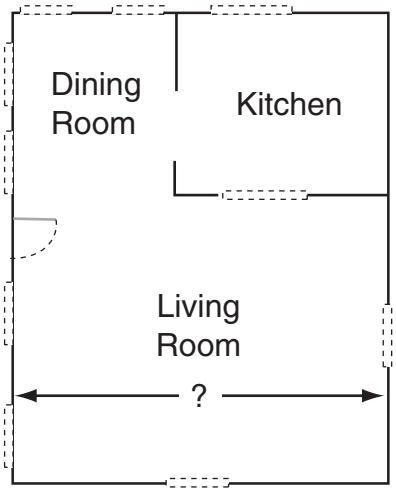
B. 

C.

D. 

❼ Use your ruler to answer this question. The picture below shows the floor plan of part of a house.

**Floor Plan**




**Scale**
1 cm represents 4 ft

What is the width of the living room?

A. 9 feet
B. 14 feet
C. 20 feet
D. 25 feet

**8** Look at this pattern.

**5, 6, 8, 11, 15, 20, ___, ___**

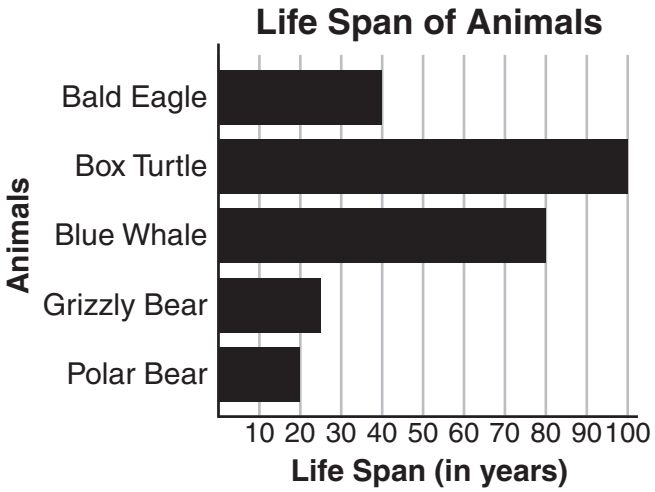
What are the next two numbers in the pattern?

A. 25, 30
B. 25, 31
C. 26, 32
D. 26, 33

**9** Mr. Farrell uses the expression $50 \times n$ to calculate the weight (in pounds) of $n$ crates. How much would 20 crates weigh?

A. 70 pounds
B. 100 pounds
C. 700 pounds
D. 1000 pounds

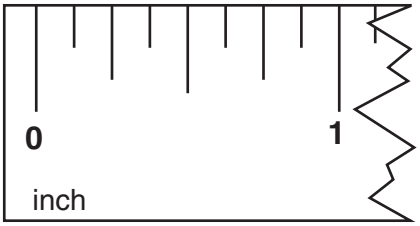
**10** The bar graph below shows the average life span of some animals.




Which animal has an average life span that is five times longer than the average life span of a polar bear?

A. bald eagle
B. box turtle
C. blue whale
D. grizzly bear

**11** Part of a ruler is shown below.

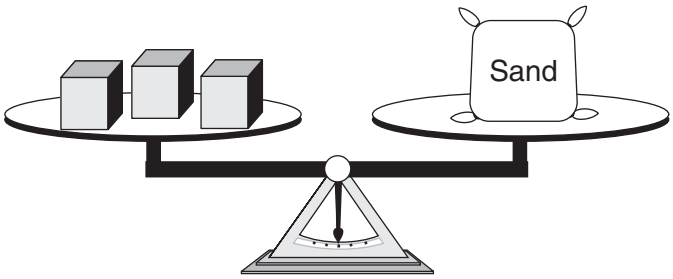



Rachel is making a bead necklace. The table below shows the width of the two types of beads Rachel is using.

| Type of Bead | Width of Each Bead |
|---|---|
| Round | $\frac{2}{8}$ inch |
| Square | $\frac{3}{8}$ inch |

What is the width of 2 round beads and 1 square bead placed side by side?

**12** The scale shown below is balanced.




The bag of sand weighs 18 pounds. Each of the cubes has the same weight. How many pounds does one cube weigh?

13 Sue made up these clues for her mystery number.

- The mystery number is a multiple of both 3 and 4.
- The mystery number is greater than 20 and less than 30.

What is Sue's mystery number? Show your work or explain how you know.

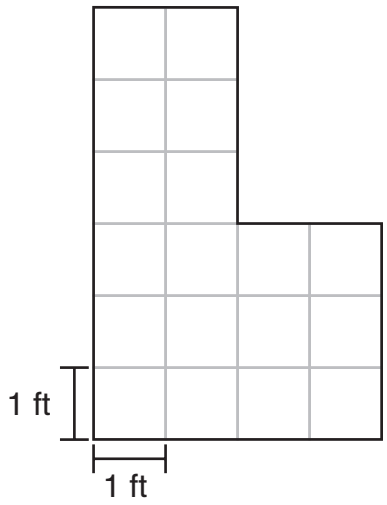
14 Mona has 5 dogs.

- The oldest dog is 10 years old.
- The median age of the dogs is 6 years.
- The mode of the dogs' ages is 2 years.

Give one possible list of the ages of Mona's dogs from the youngest to the oldest.

**15** The picture below shows the shape of a garden.

**Garden**




a. What is the perimeter of the garden? Label your answer with the correct unit of measure.

b. What is the area of the garden? Label your answer with the correct unit of measure.

c. What is the perimeter of a rectangle that has the same area as the garden? Show your work or explain how you know. Label your answer with the correct unit of measure.

# Grade 5 Mathematics Released Item Information

| **Released Item Number** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Calculator Allowed** | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ |
| **Content Strand**[1] | NO | NO | NO | NO | NO | GM | GM | FA | FA | DP | NO | FA | NO | DP | GM |
| **GLE Code** | 4-1 | 4-1 | 4-2 | 4-4 | 4-4 | 4-1 | 4-5 | 4-1 | 4-3 | 4-1 | 4-3 | 4-4 | 4-4 | 4-2 | 4-6 |
| **Depth of Knowledge Code** | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 3 | 2 |
| **Item Type**[2] | MC | MC | MC | MC | MC | MC | MC | MC | MC | MC | SA | SA | SA | SA | CR |
| **Answer Key** | B | B | D | A | D | D | C | D | D | B | | | | | |
| **Total Possible Points** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 4 |

[1]Content Strand: NO = Numbers & Operations, GM = Geometry & Measurement, FA = Functions & Algebra, DP = Data, Statistics, & Probability

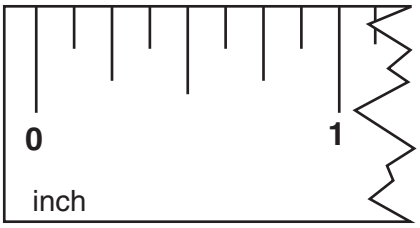
[2]Item Type: MC = Multiple-Choice, SA = Short Answer, CR = Constructed Response

# New England Common Assessment Program

## Released Items Support Materials 2005

## Grade 5 Mathematics

**11** Part of a ruler is shown below.




Rachel is making a bead necklace. The table below shows the width of the two types of beads Rachel is using.

| Type of Bead | Width of Each Bead |
|---|---|
| Round | $\frac{2}{8}$ inch |
| Square | $\frac{3}{8}$ inch |

What is the width of 2 round beads and 1 square bead placed side by side?

**Scoring Guide:**

| Score | Description |
|---|---|
| **1** | Student correctly gives the width of the three beads, $\frac{7}{8}$ **(inch)**. |
| **0** | Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured. |
| **Blank** | no response |

## Score Point 1 (Example A)

$$\frac{2}{8} + \frac{2}{8} + \frac{3}{8} = \frac{7}{8}$$

Although included and correct, work is not necessary for credit.

Student correctly gives the width of the three beads. (Units are not necessary for credit.)

## Score Point 1 (Example B)

$\frac{7}{8}$ inches

Student correctly gives the width of the three beads.

## Score Point 0 (Example A)

$\frac{7}{16}$

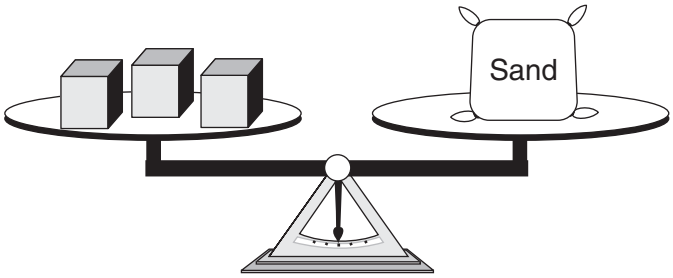
Student's answer is incorrect.

## Score Point 0 (Example B)

$\frac{8}{2}$ inches

Student's answer is incorrect.

**12** The scale shown below is balanced.




The bag of sand weighs 18 pounds. Each of the cubes has the same weight. How many pounds does one cube weigh?

**Scoring Guide:**

| Score | Description |
|---|---|
| **1** | Student correctly answered, **6 (pounds)**. |
| **0** | Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured. |
| **Blank** | no response |

## Score Point 1 (Example A)

Each cube will weigh 6 pounds.

Student's answer is correct.

## Score Point 1 (Example B)

6

Student's answer is correct. (Units are not necessary for credit.)

## Score Point 0 (Example A)

They all together way 54 pounds.

Student's answer is incorrect.

## Score Point 0 (Example B)

Sand: 18

cubes: ?

$3\overline{)18}$ = 6

answer

Student's answer, "3," is incorrect.

**13** Sue made up these clues for her mystery number.

- The mystery number is a multiple of both 3 and 4.
- The mystery number is greater than 20 and less than 30.

What is Sue's mystery number? Show your work or explain how you know.

**Scoring Guide:**

| Score | Description |
|---|---|
| **2** | Student correctly answered, **24**, with work shown or explanation given. |
| **1** | Student gives correct answer, but no work or explanation.<br>OR<br>Student gives an answer that is a multiple of 3 and 4 (other than 24). |
| **0** | Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured. |
| **Blank** | no response |

**Sample Response:**

Multiples of 3 less than 30: 3, 6, 9, 12, 15, 18, 21, 24, 27

Multiples of 4 less than 30: 4, 8, 12, 16, 20, 24, 28

The only number that is in both lists and between 20 and 30 is 24.

## Score Point 2 (Example A)

24 is Sue's mystery number.

4*6 = 24
3*8 = 24

those are the only ones

24 is less than 30 and more than 20.

Student shows appropriate work, and answer is correct. (2 points)

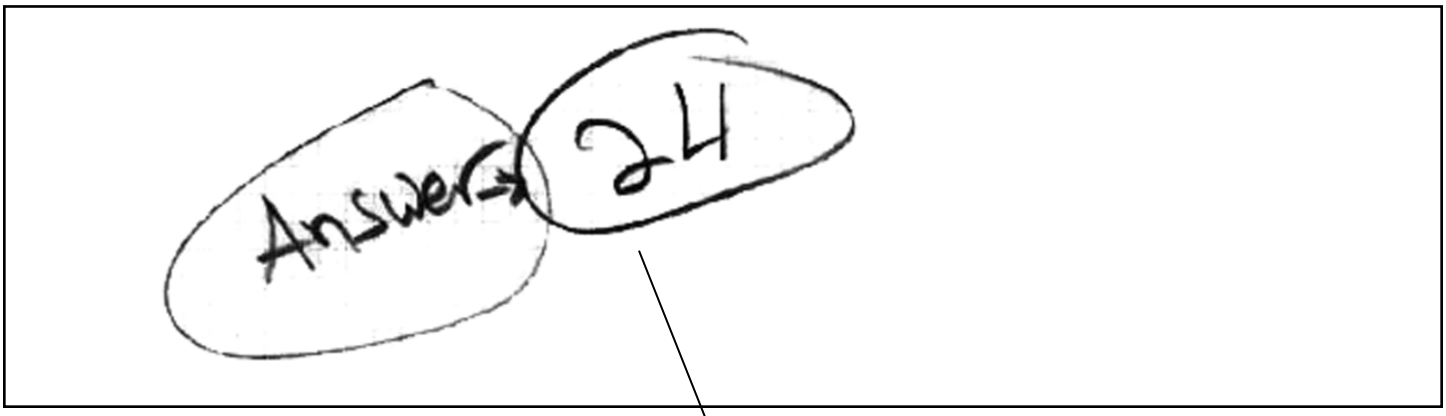
## Score Point 1 (Example A)

Mystery number: 24

I tryed different numbers until I found the right one.

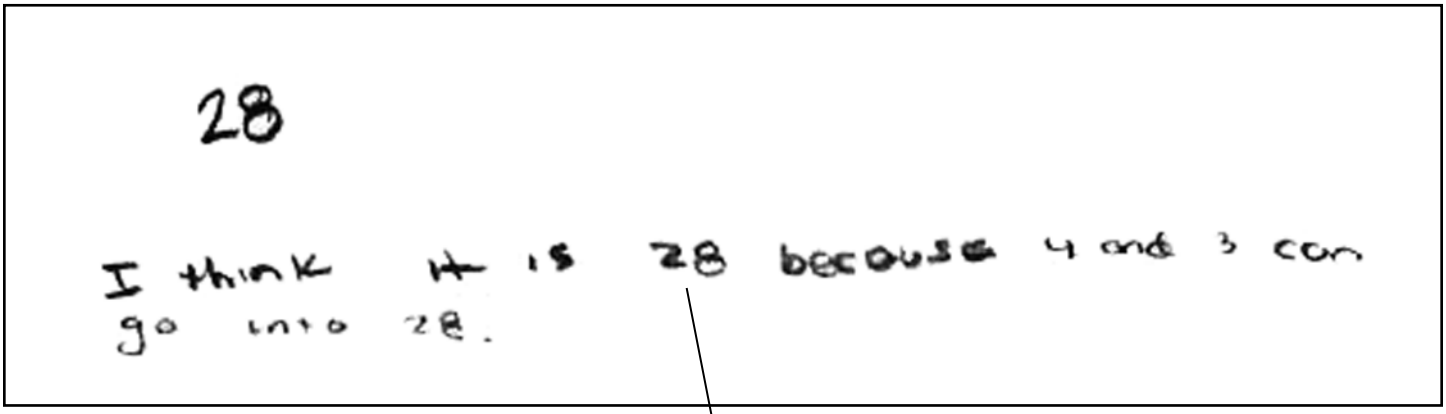
Student's answer is correct (1 point) but explanation is not sufficient (0 points).

## Score Point 1 (Example B)




Student's answer is correct (1 point) but work/explanation is missing (0 points).

## Score Point 0 (Example A)




Student's answer is not correct since it is not a multiple of both 3 and 4. (0 points)

## Score Point 0 (Example B)

20 21 22 23 24 25 26 27 28 29
it is 21 because if and 3 and 4
yo do 3x4 it is 12
turn it around you get
21

Student's answer and strategy are not correct. (0 points)

**14** Mona has 5 dogs.

- The oldest dog is 10 years old.
- The median age of the dogs is 6 years.
- The mode of the dogs' ages is 2 years.

Give one possible list of the ages of Mona's dogs from the youngest to the oldest.

**Scoring Guide:**

| Score | Description |
|---|---|
| **2** | Student gives a list of five ages that has the correct mode, median, and oldest age. |
| **1** | Student gives a list that has two out of the three measurements correct. |
| **0** | Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured. |
| **Blank** | no response |

**Sample Response:**

2 years, 2 years, 6 years, 7 years, 10 years

**Note:**

- Do not penalize for a list of ages from oldest to youngest or a nonsequential list.
- Accept any answer in the form: 2 years, 2 years, 6 years, $\square$ years, 10 years (where $\square$ = 7, 8, or 9).

## Score Point 2 (Example A)

2, 2, 6, 9, 10 6 is the median

2 is the mode

The oldest dog is 10 years old.

Student gives a list of five ages that has the correct mode, median, and oldest age. Note: Student does not need to show how to determine the median to receive credit. (2 points)

## Score Point 2 (Example B)

2, 2, 6, 7, 10

Student gives a list of five ages that has the correct mode, median, and oldest age. (2 points)

## Score Point 1 (Example A)

10 years old (the oldest)
6 years old (the median age)
2, 2, 2 years old (the mode age

2,2,2,6,10

Student gives a list of five ages that has the correct mode and oldest age but an incorrect median. (1 point)

## Score Point 0 (Example A)

I counted by 2 and got it. It is 8 and 4.

Student's response is irrelevant. (0 points)

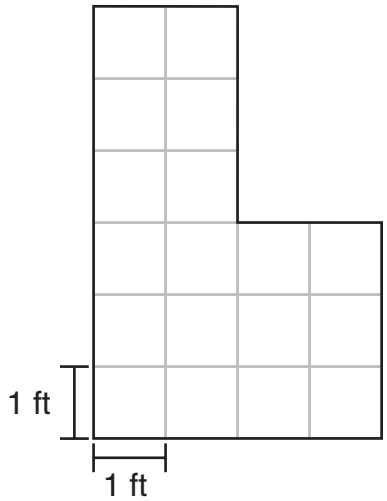
## Score Point 0 (Example B)

age's two threw 10.

Student's response is incorrect because it does not provide a list of five ages. (0 points)

**15** The picture below shows the shape of a garden.

**Garden**




a. What is the perimeter of the garden? Label your answer with the correct unit of measure.

b. What is the area of the garden? Label your answer with the correct unit of measure.

c. What is the perimeter of a rectangle that has the same area as the garden? Show your work or explain how you know. Label your answer with the correct unit of measure.

**Scoring Guide:**

| Score | Description |
|---|---|
| **4** | 4 points |
| **3** | 2½–3½ points |
| **2** | 1½ or 2 points |
| **1** | ½ or 1 point |
| **0** | Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured. |
| **Blank** | no response |

**Training Notes:**

Part a: 1 point for the correct answer, **20 feet**

Part b: 1 point for the correct answer, **18 square feet**

Part c: 2 points for any correct perimeter of a rectangle with an area equal to 18 square feet or a correct answer based on incorrect part b with work shown or explanation given
OR
1 point for the correct perimeter, no work shown or explanation given
or
for correct strategy shown in solving the problem, but there is a computation error

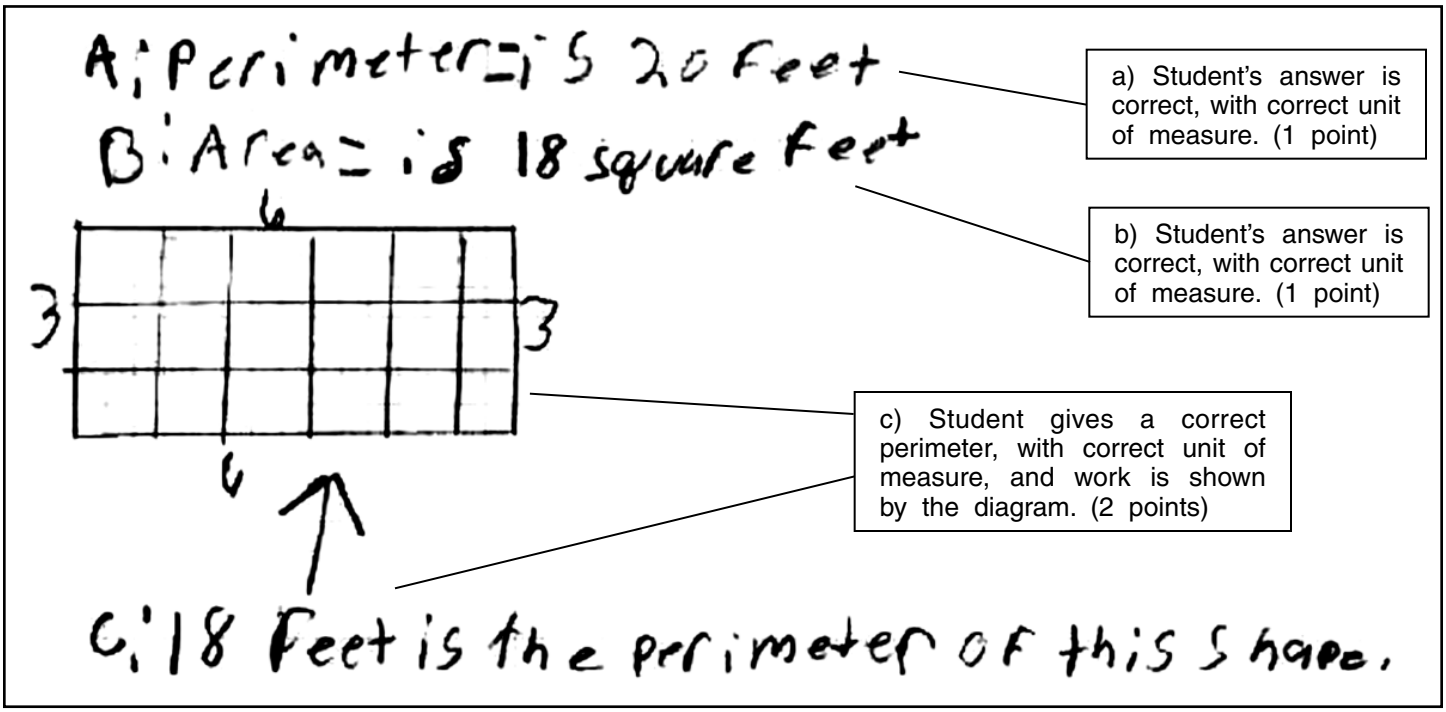
**Notes:**

- A correct strategy in part c could be a diagram of a rectangle with area equal to 18 or based on part b.
- If student does not indicate appropriate units or omits units in answers to parts a, b, and/or c, deduct ½ point per part before awarding final score.

**Sample Responses:**

Part c: 1 by 18 with perimeter 38 feet
2 by 9 with perimeter 22 feet
3 by 6 with perimeter 18 feet

## Score Point 4 (Example A)

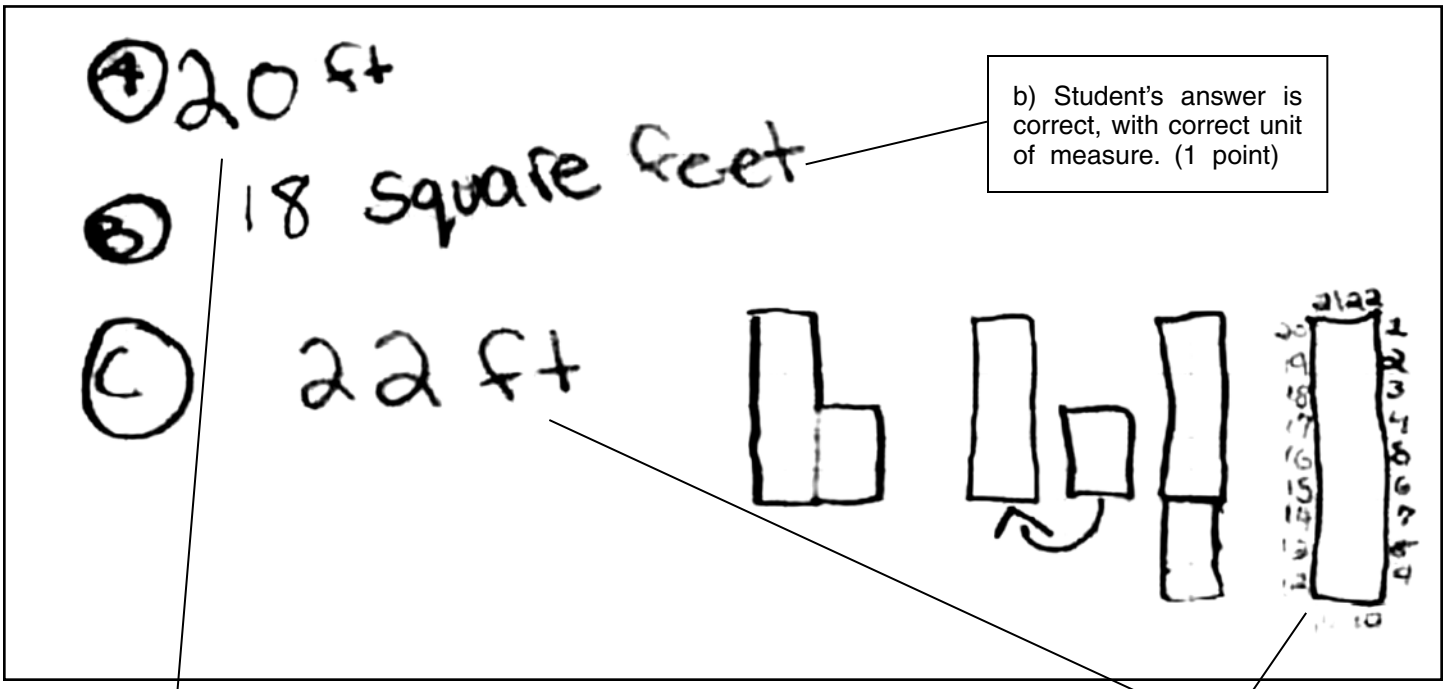



a) Student's answer is correct, with correct unit of measure. (1 point)

b) Student's answer is correct, with correct unit of measure. (1 point)

c) Student gives a correct perimeter, with correct unit of measure, and work is shown by the diagram. (2 points)

## Score Point 4 (Example B)

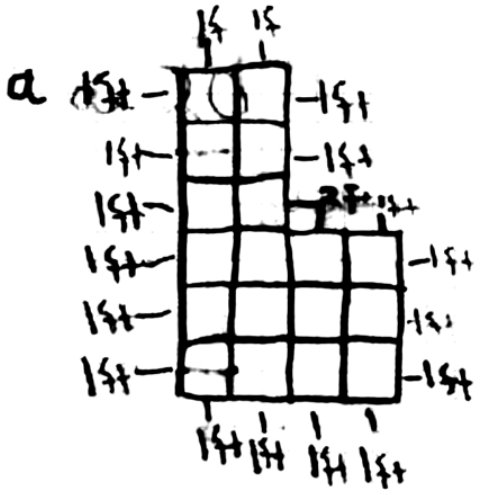



b) Student's answer is correct, with correct unit of measure. (1 point)

a) Student's answer is correct, with correct unit of measure. (1 point)

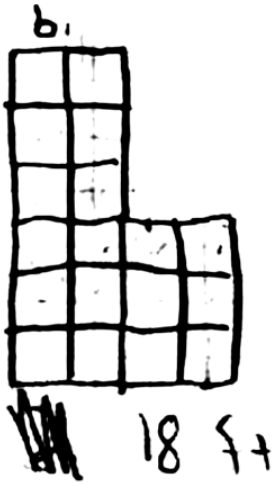
c) Student gives a correct perimeter, with correct unit of measure, and work is shown by the diagram. (2 points)

## SCORE POINT 3 (EXAMPLE A)

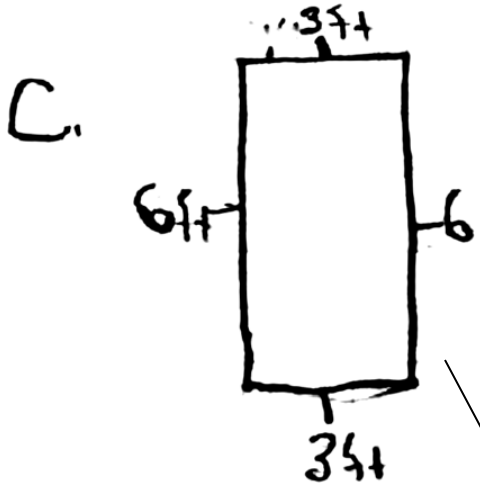



Answer: 20 ft.

a) Student's answer is correct, with correct unit of measure. (1 point)



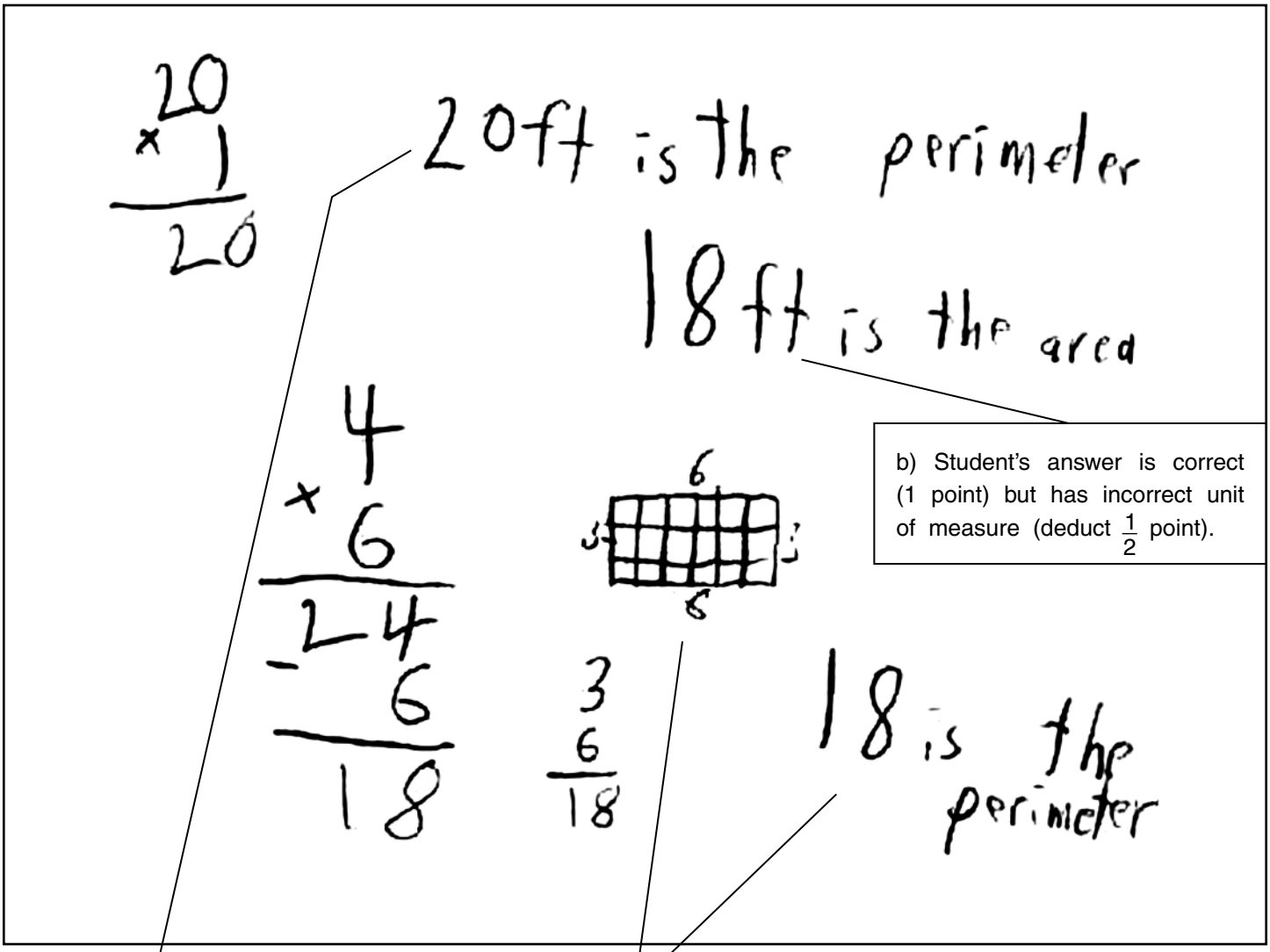

b) Student's answer is correct (1 point) but has incorrect unit of measure (deduct $\frac{1}{2}$ point).




Answer: 18 ft.

c) Student gives a correct perimeter, with correct unit of measure, and work is shown by the diagram. (2 points)

## SCORE POINT 3 (EXAMPLE B)

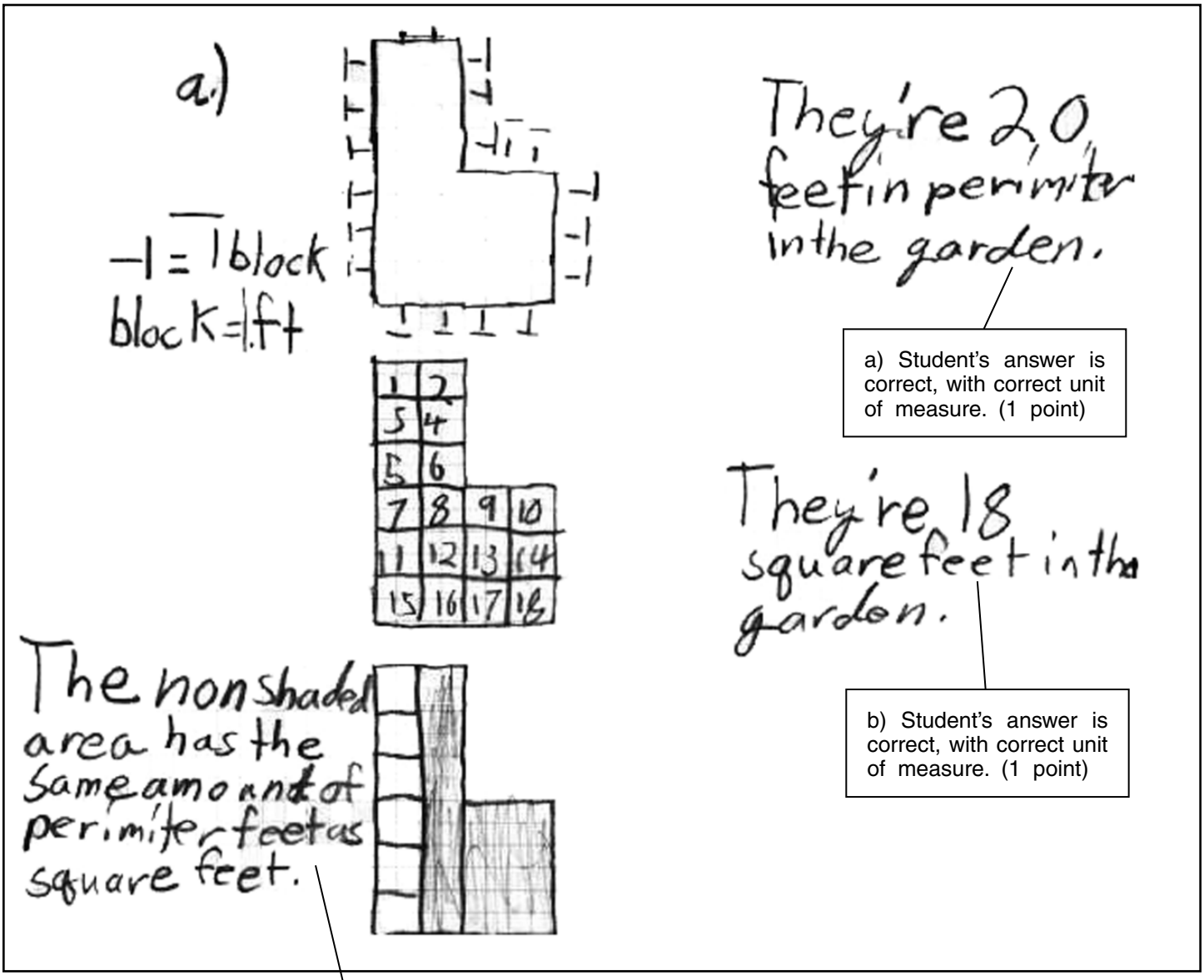



a) Student's answer is correct, with correct unit of measure. (1 point)

b) Student's answer is correct (1 point) but has incorrect unit of measure (deduct $\frac{1}{2}$ point).

c) Student gives a correct perimeter with work shown by the diagram (2 points), but omits unit of measure (deduct $\frac{1}{2}$ point).

## SCORE POINT 2 (EXAMPLE A)




a) Student's answer is correct, with correct unit of measure. (1 point)

b) Student's answer is correct, with correct unit of measure. (1 point)

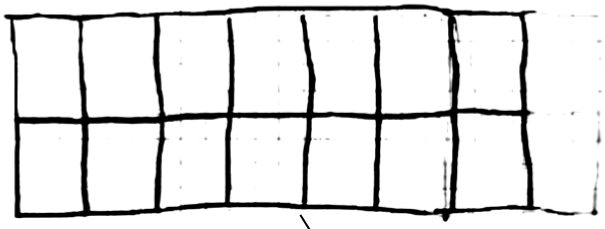
c) Student does not give a correct perimeter and does not show appropriate strategy in solving the problem. (0 points)

## SCORE POINT 2 (EXAMPLE B)

a) Perimiter: 20 Ft.

b) area 18 Ft.

c)

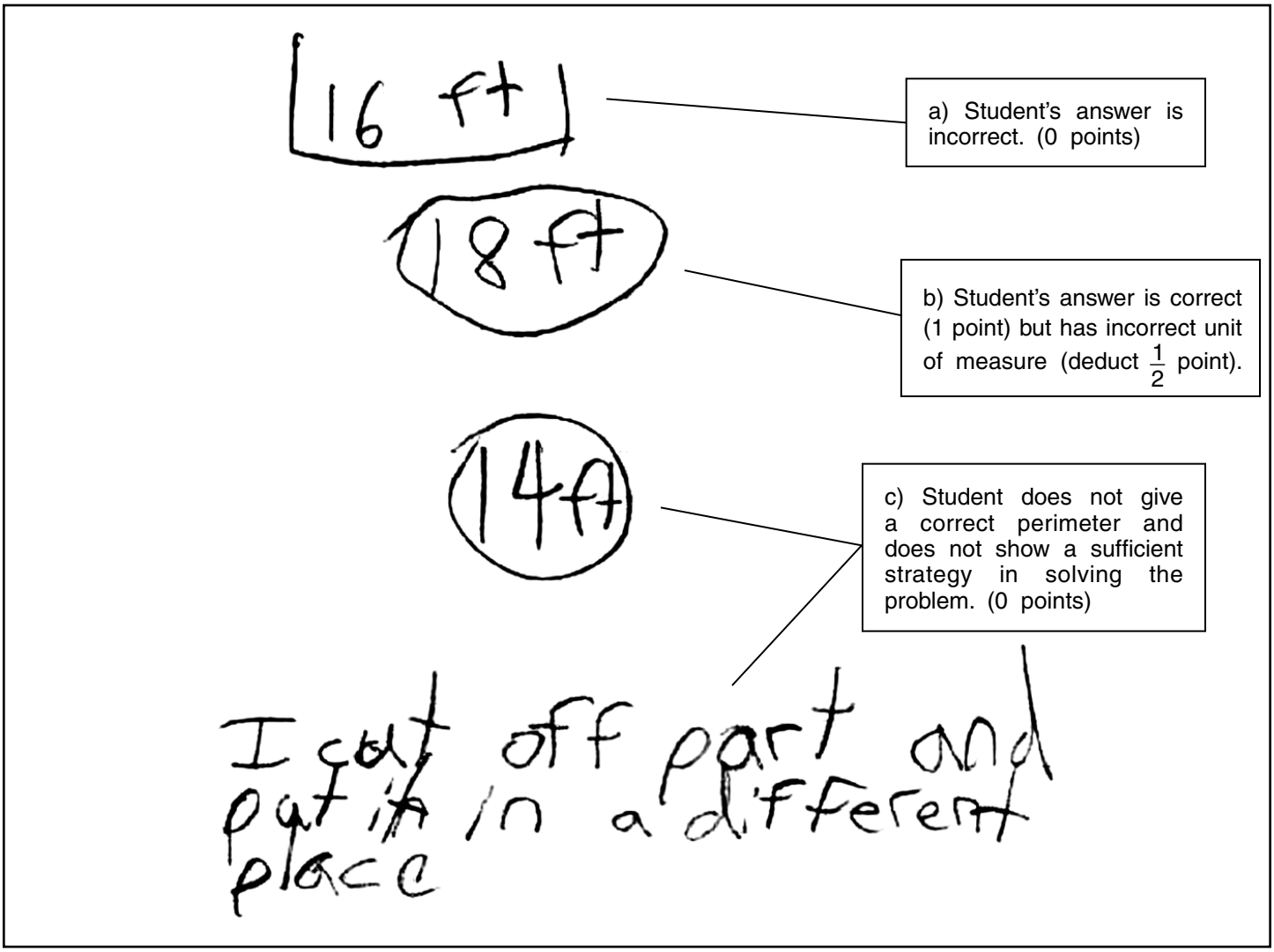


a) Student's answer is correct, with correct unit of measure. (1 point)

b) Student's answer is correct (1 point) but has incorrect unit of measure (deduct $\frac{1}{2}$ point).

c) Student does not give a correct perimeter and does not show a sufficient strategy in solving the problem. (0 points)

## Score Point 1 (Example A)



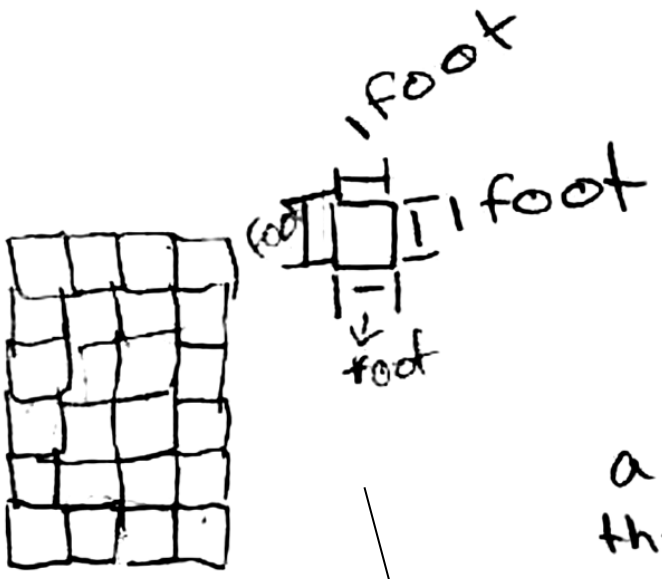
## SCORE POINT 0 (EXAMPLE A)

Perimete: 6x4

area: 36 Feet

a) Student's answer is incorrect. (0 points)

b) Student's answer is incorrect. (0 points)




I drew a rectangle the same area of the garden that is shown.

c) Student does not give a perimeter (0 points) and diagram is neither correct based on part b nor correct based on a rectangle that has the same area as the garden (0 points).

## SCORE POINT 0 (EXAMPLE B)

72 is the perimeter
64 is the area
48 is a rectangles perimeter.

a) Student's answer is incorrect. (0 points)

b) Student's answer is incorrect. (0 points)

c) Student neither gives a correct perimeter based on part b nor gives a correct perimeter of a rectangle that has the same area as the garden (0 points), and does not a show a sufficient strategy in solving the problem (0 points).

I know because I added up all the blocks by 4.