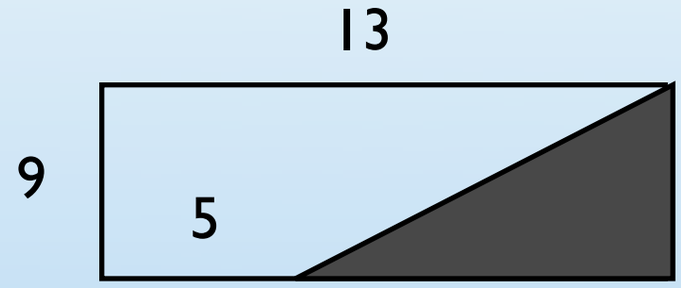
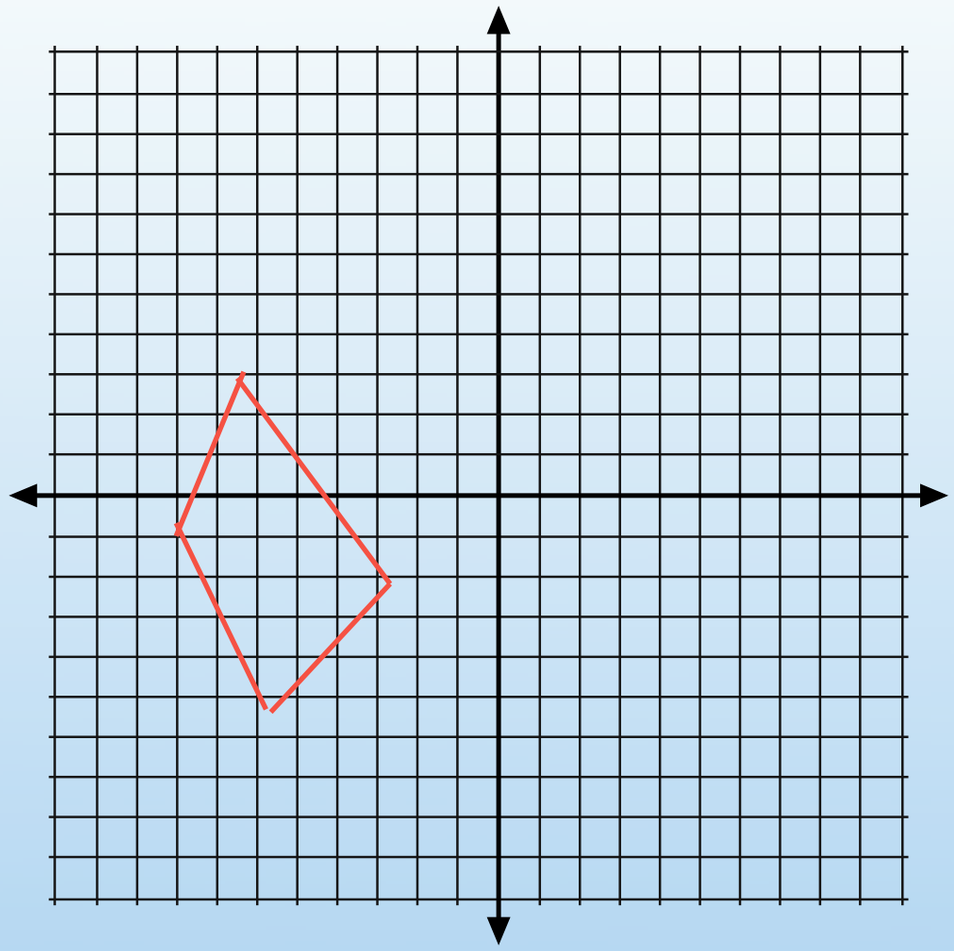
Day 62

1. Opener

a) What is the unshaded area?



Sketch the figure after applying the translation:

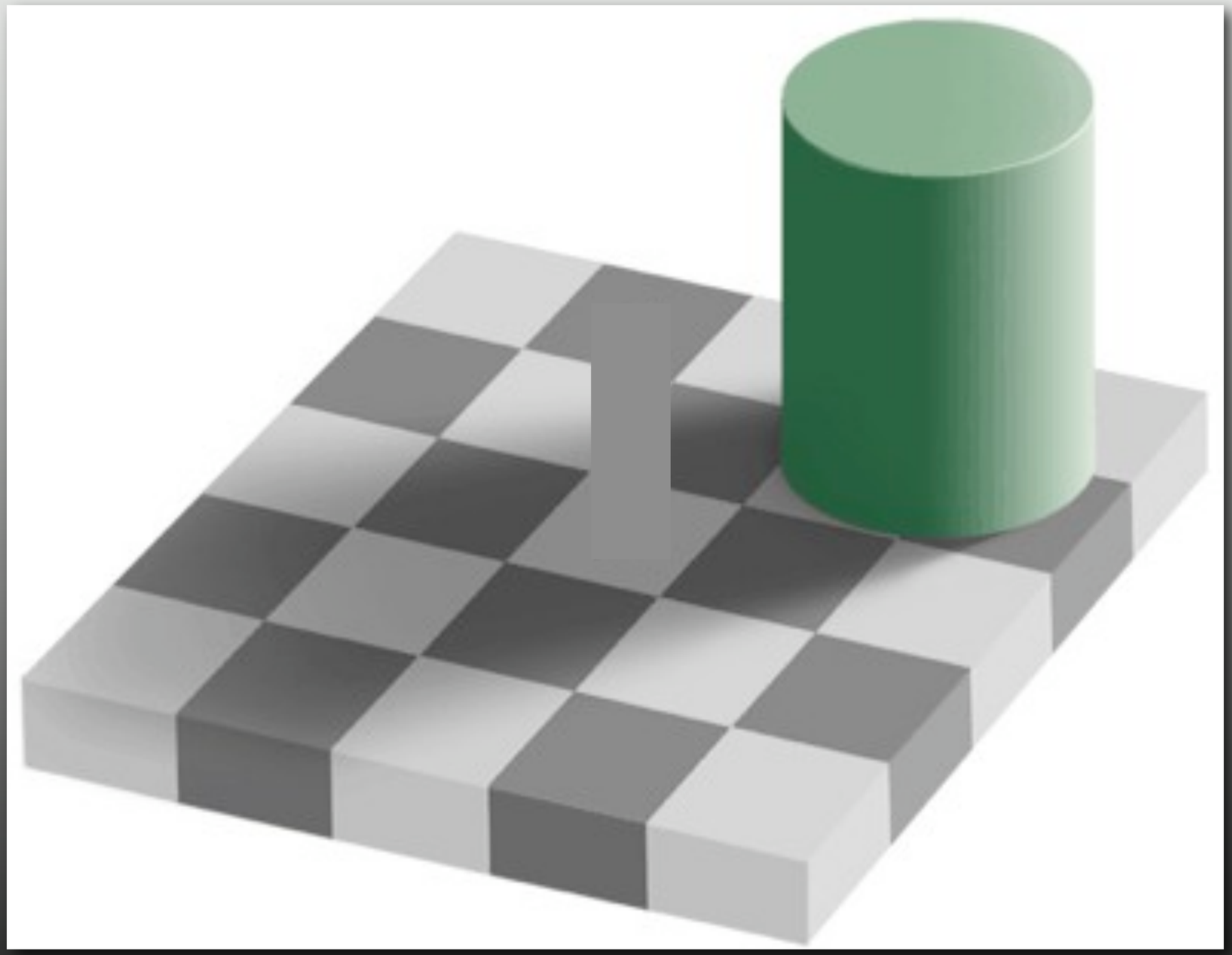


b) $(x, y) \longrightarrow (x, y + 5)$

c) $(x, y) \longrightarrow (x, -y + 5)$

d) What percent of car accidents are caused by sleep deprivation?

54%



http://www.boingboing.net/2008/02/08/color-tile-optical-i.html

CST Toolkit

Released Question #21

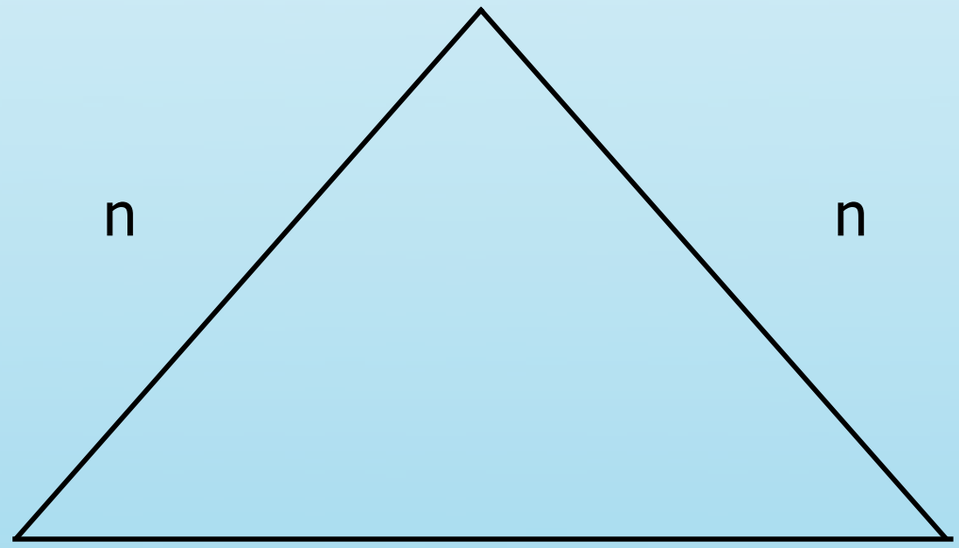
In the figure below, n is a whole number. What is the smallest possible value for n?

A. 1

B. 7

C. 8

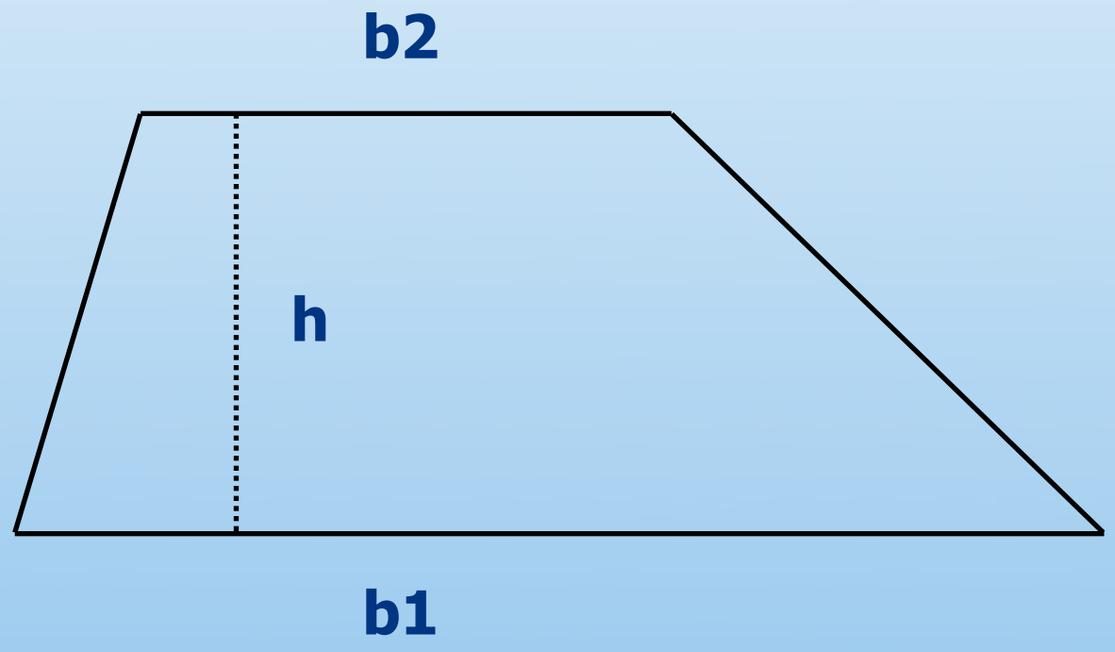
D. 14



6. Notes - Area

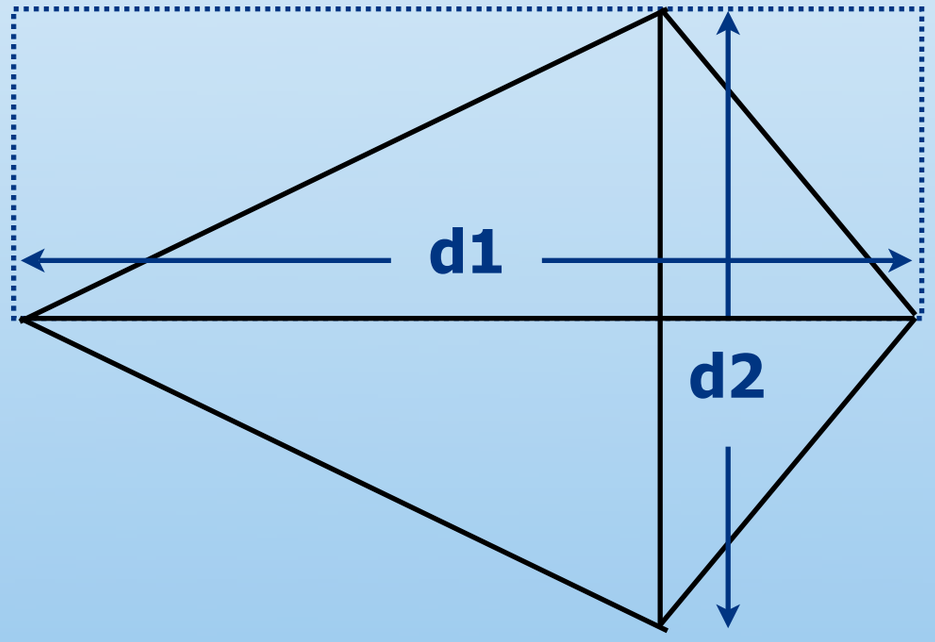
6. Notes - Area

2. Notes - Area



Make sure they know that the side aren’t the same as the height.

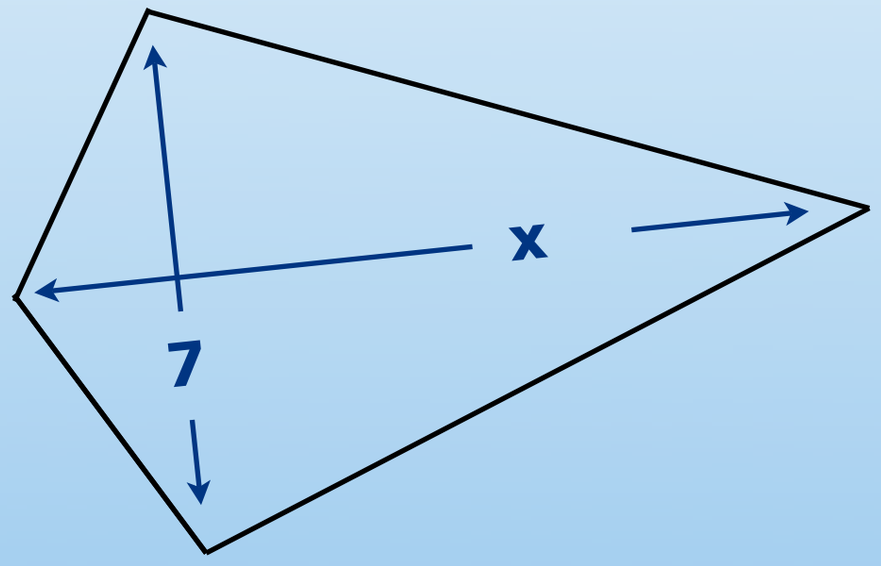
2. Notes - Area



Have them draw a kite and remember what the diagonals are. Do you see the rectangle?

2. Notes - Area

Kite



A = 66.5

x = 19

Trapezoid

A = 100

P = [redacted]

Working backwards from area. Good rigor.

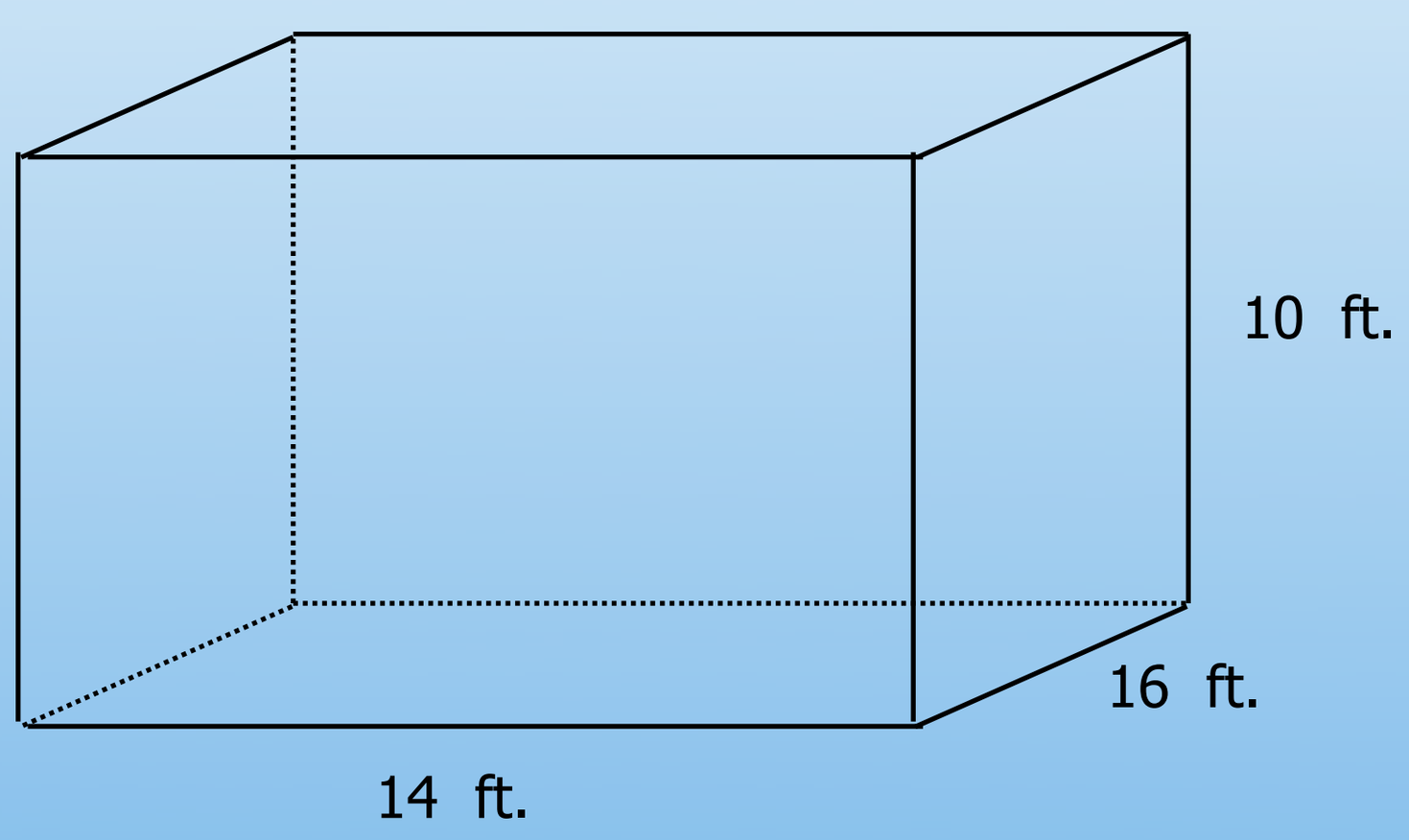
3. Classwork

pg. 418 // #1 - 11, 20

6. Classwork

148 rooms.

How much area will she have to paint in the entire motel?

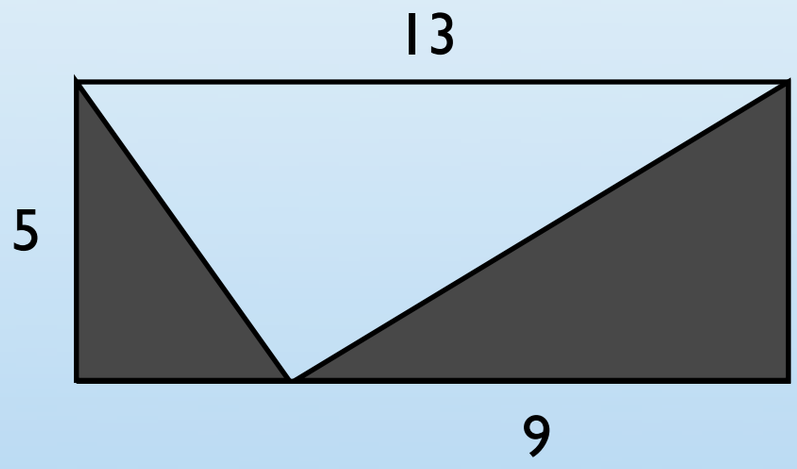


Show them how to draw a rectangular solid from parallelograms.

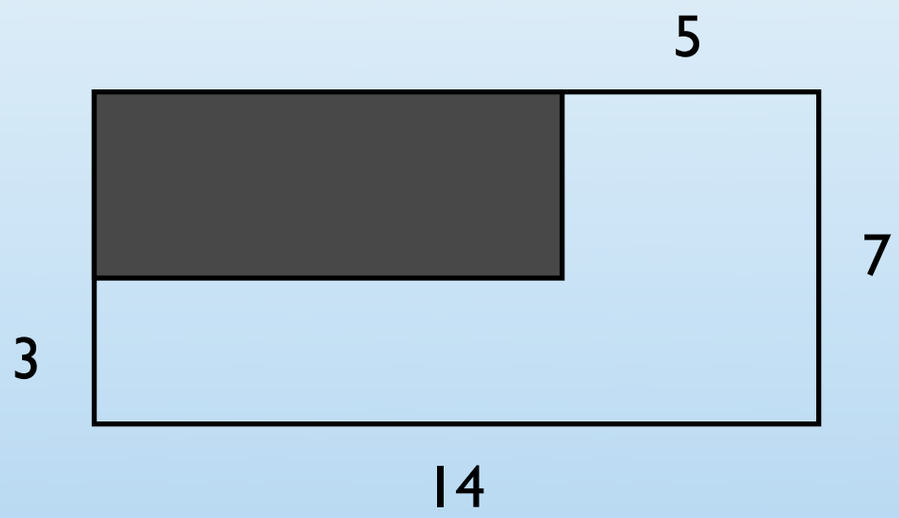
Day 63

1. Opener

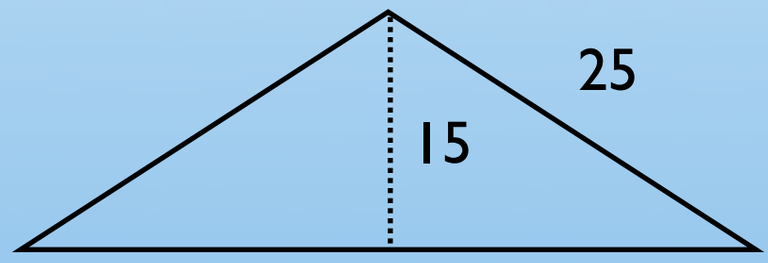
a) What is the shaded area?



b) What is the unshaded area?



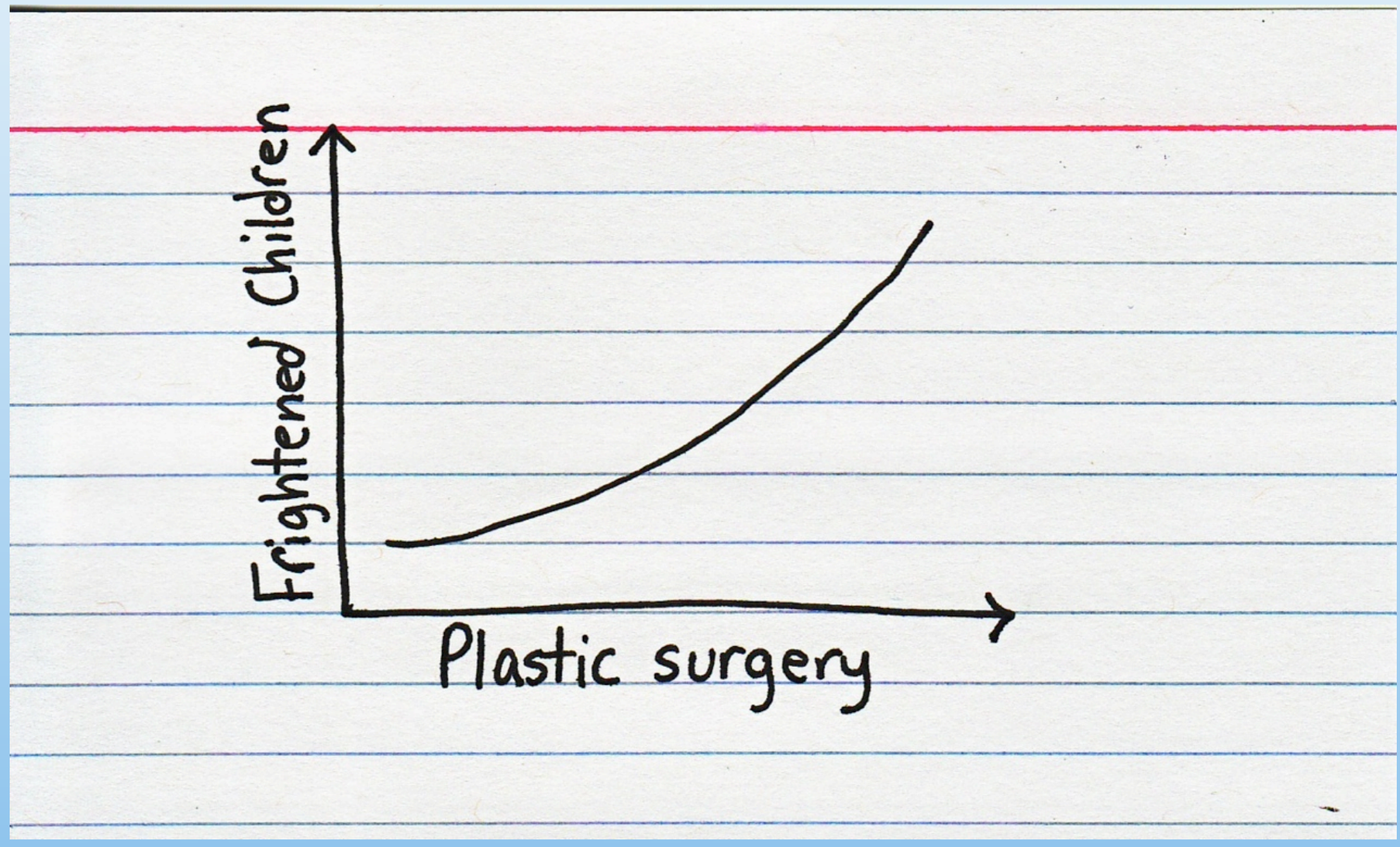
c) The area of this isosceles triangle is 300. Find the perimeter.



d) What is the length of the average American marriage?

7.2 years

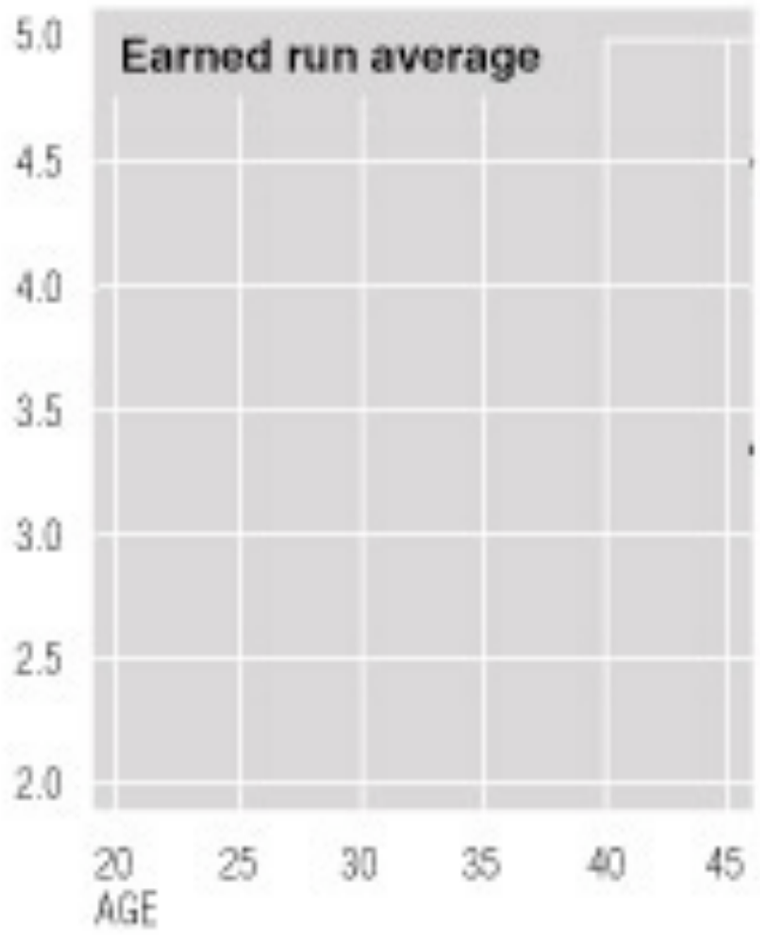
3. Draw the Graph

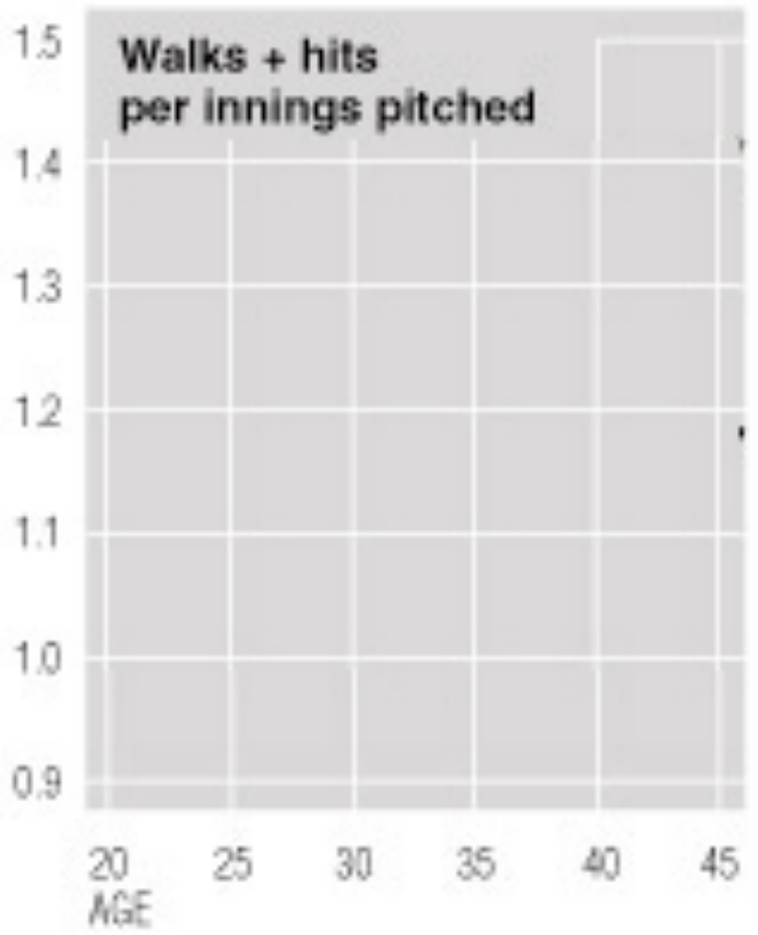


Ask for any two things, no matter how absurd.

Comparing Careers

A statisitcal comparison between Roger Clemens and the 31 other pitchers since 1968 who started at least 10 games in at least 15 seasons and pitched at least 3,000 innings. Note: A smooth curve is used to represent the data.





Sources: Eric Bradlow, Shane Jensen, Justin Wolfers and Adi Wyner

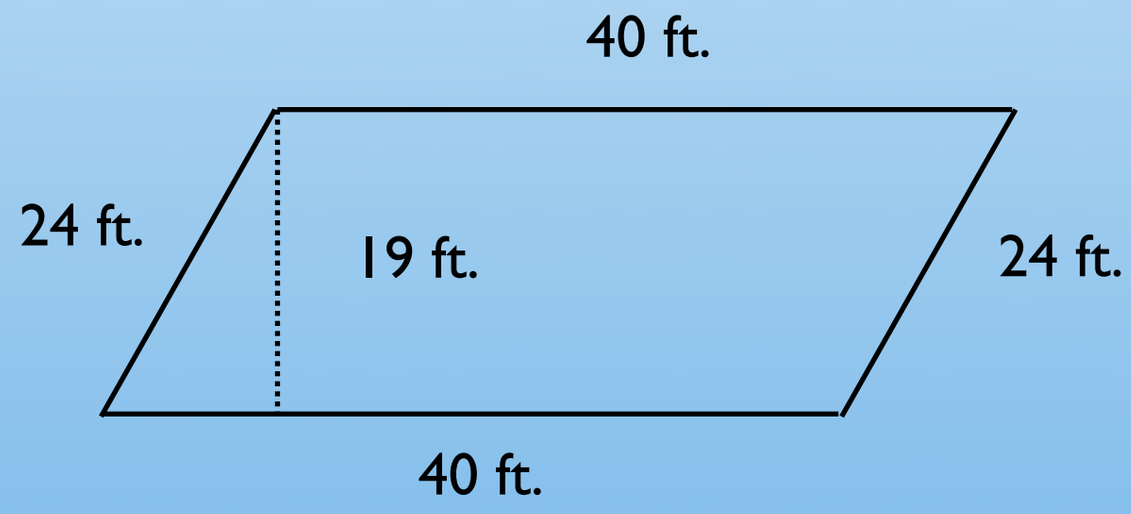
2. Basketball

1. This is a rectangle. Its area is 78 square centimeters. How tall is it?

6 cm.

2. This is a parallelogram. It's area is 760 square feet. What is its perimeter?

128 ft.



2. Basketball

east fan

santa fe

2. Basketball

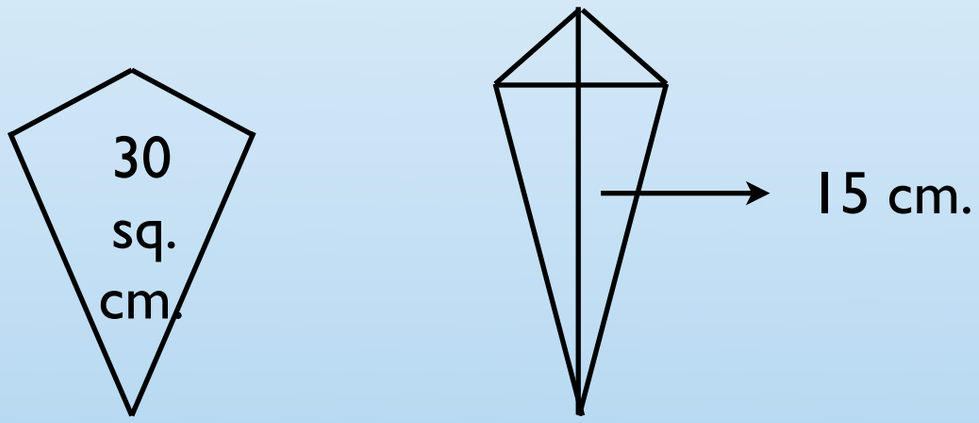
camera snot

sacramento

2. Basketball

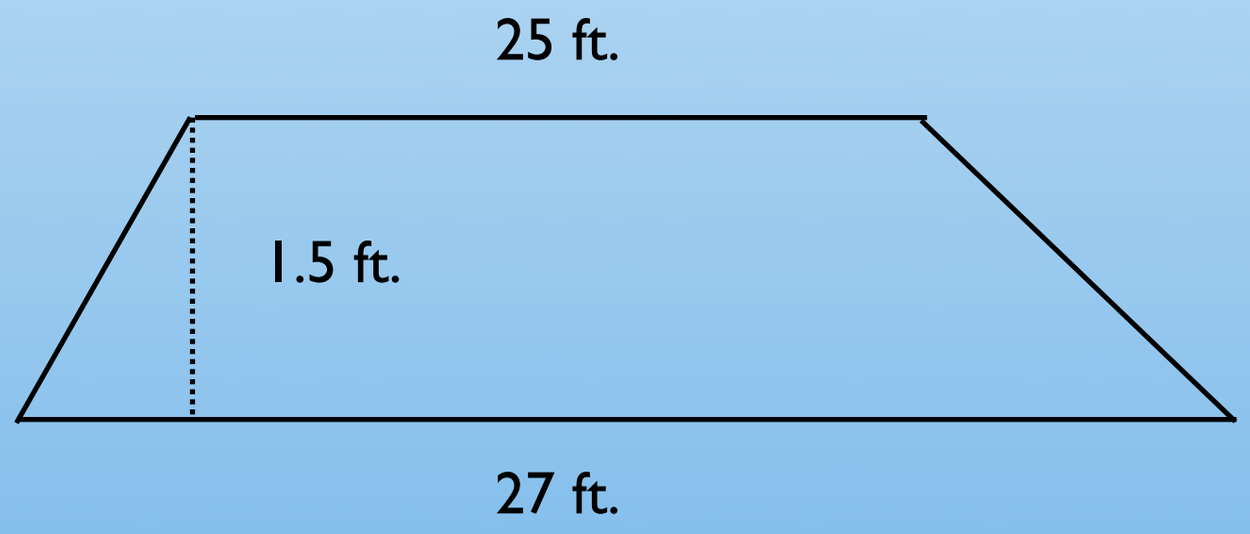
3. These kites have the same area. What is the length of the missing diagonal?

4 cm.



4. This is a trapezoid. Its area is 39 square ft. What is its height?

1.5 ft.



2. Basketball

ale hen

helena

2. Basketball

hence yen

cheyenne

2. Basketball

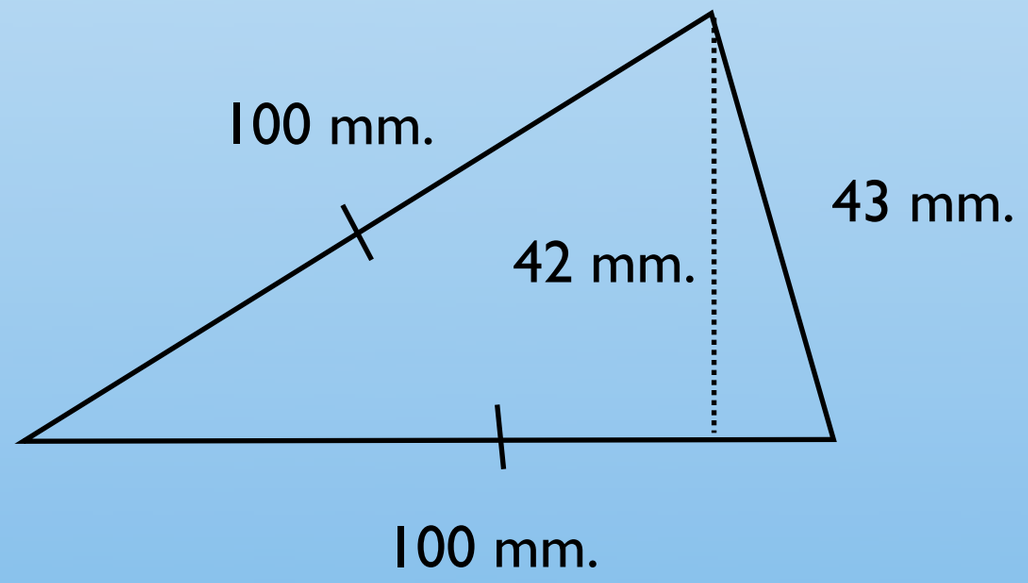
5. This triangle is isosceles. What is its perimeter?

   243 mm.

6. What is its area?

   Not enough information.

   2100 square mm.



#8 is fun as they all wonder how to solve for area without the height. If no one in your entry-level Geometry class answers “30 square millimeters,” you’re the winner.

2. Basketball

tack tea silly

salt lake city

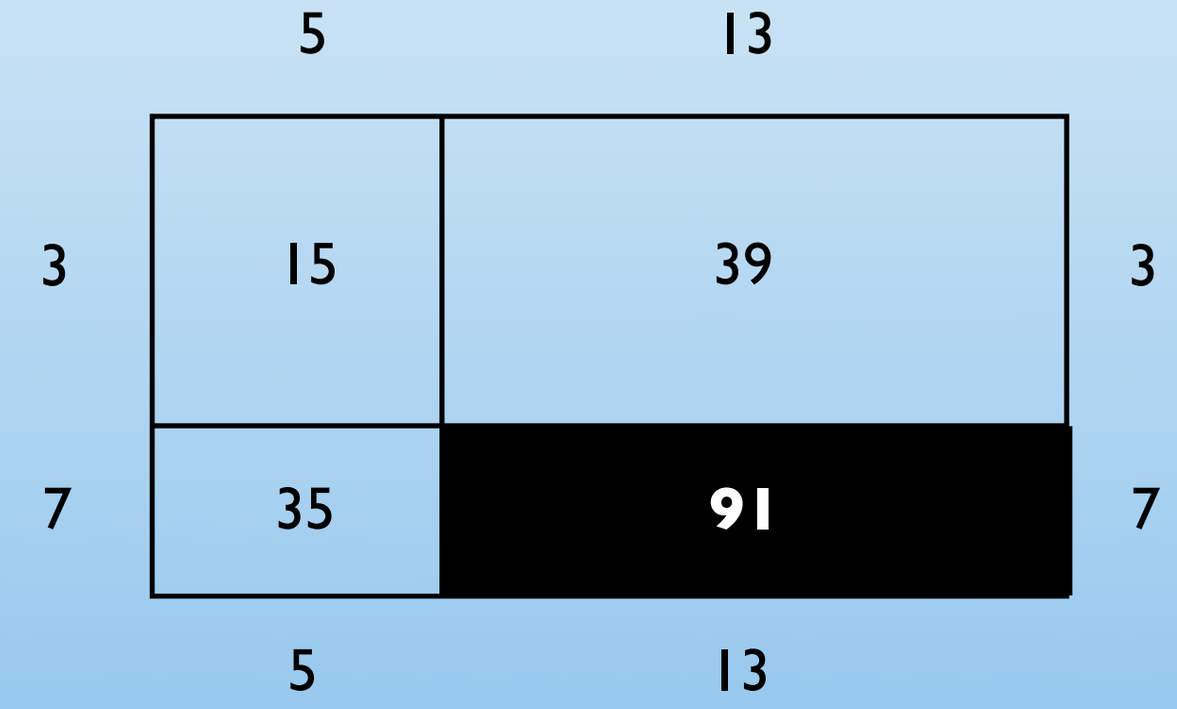
2. Basketball

domains

madison

2. Basketball

7. What is the shaded area of the rectangle? (Not even a little to scale.)



2. Basketball

leach snort

charleston

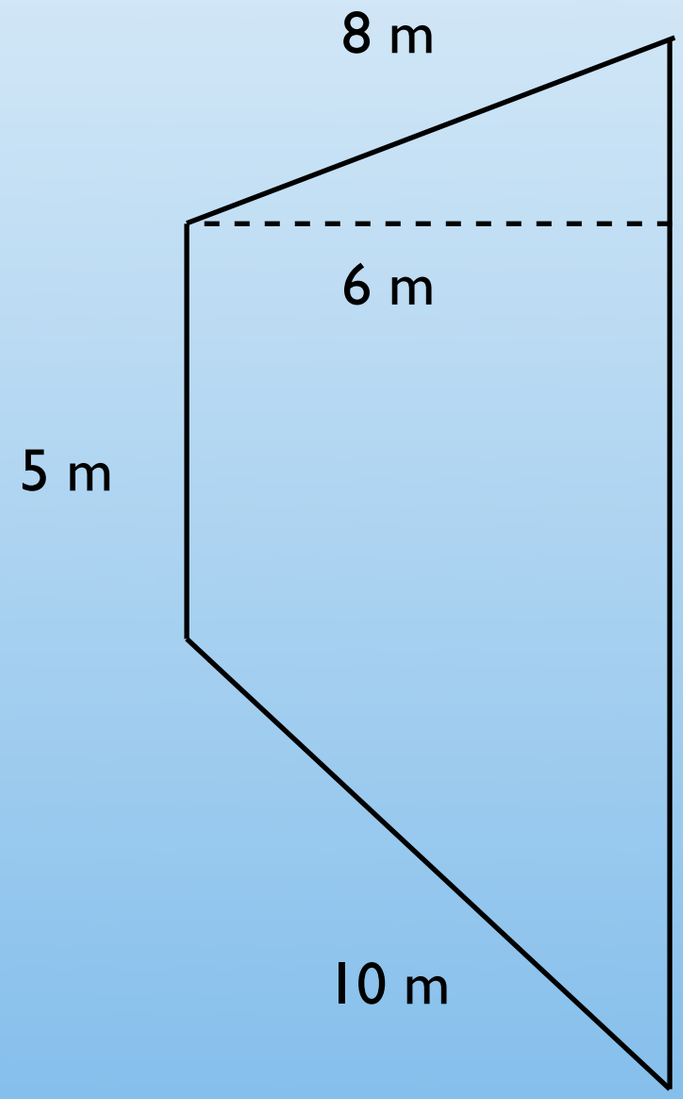
2. Basketball

be i so

boise

2. Basketball

8. The perimeter of this trapezoid is 38 m. What is its area?

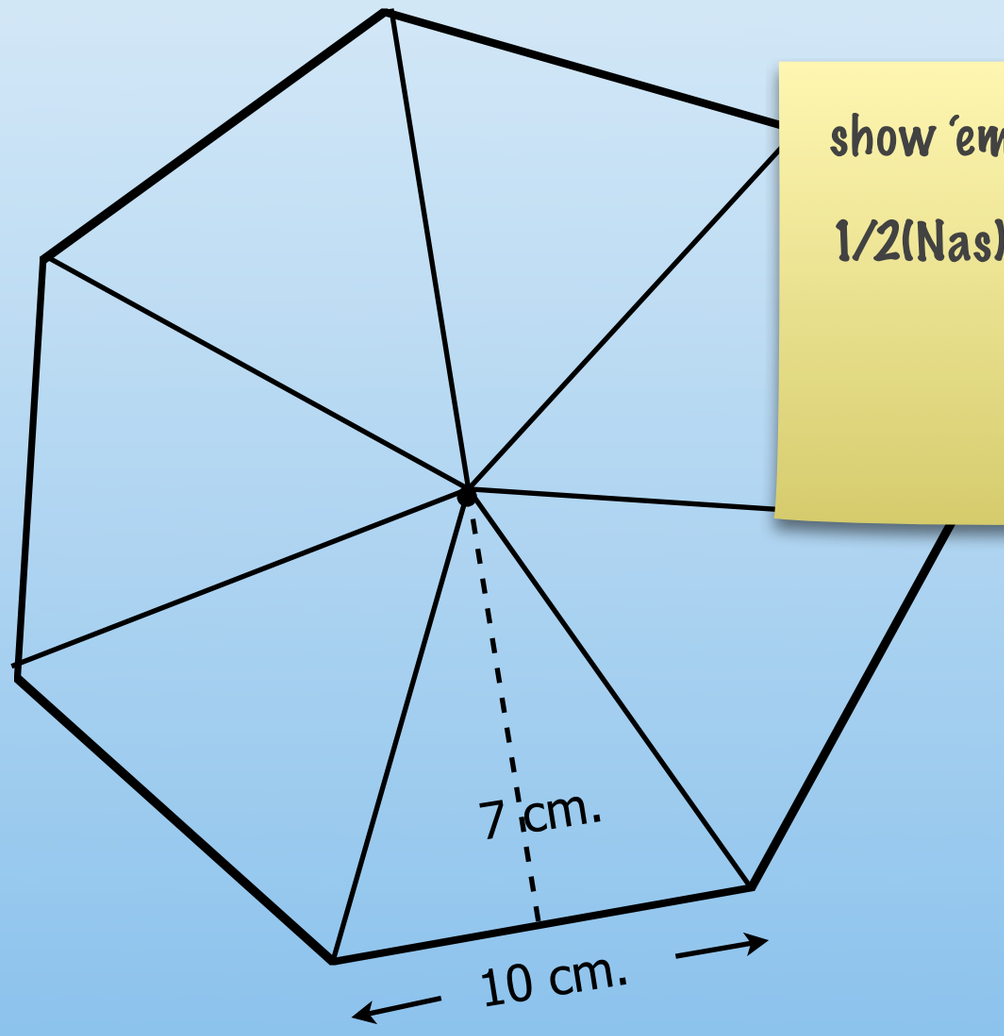


60 m^2

3. Break

4. Show and Tell

5. Notes - Area of Regular Polygons



show 'em 1/2(asn)

1/2(Nas)

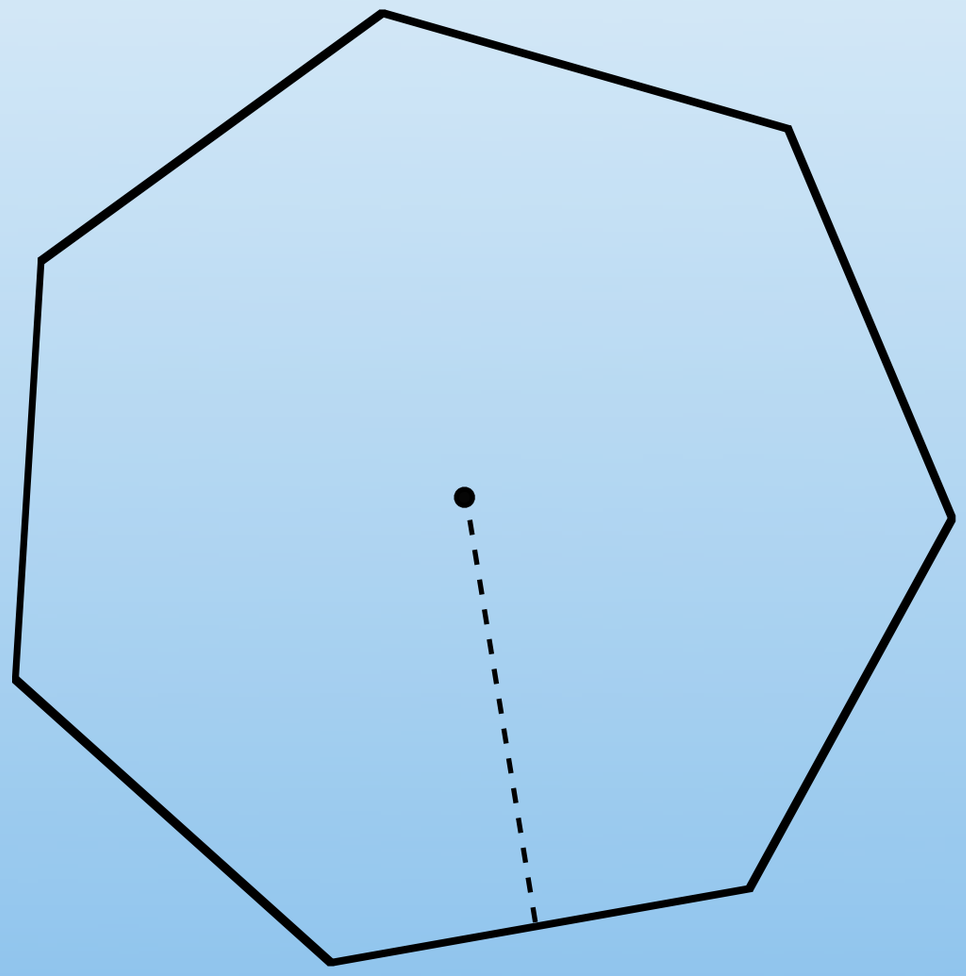
s = 10 cm.

a = 7 cm.

A = 245 square cm.

In one class, I started by deriving a formula (basically flipping this slide with the next one) and then going for a specific case. The next class I pulled a switch and everyone was, foundationally, a little better off. Ask here: what shape can you split the regular polygon into?

5. Notes - Area of Regular Polygons



n = [redacted]

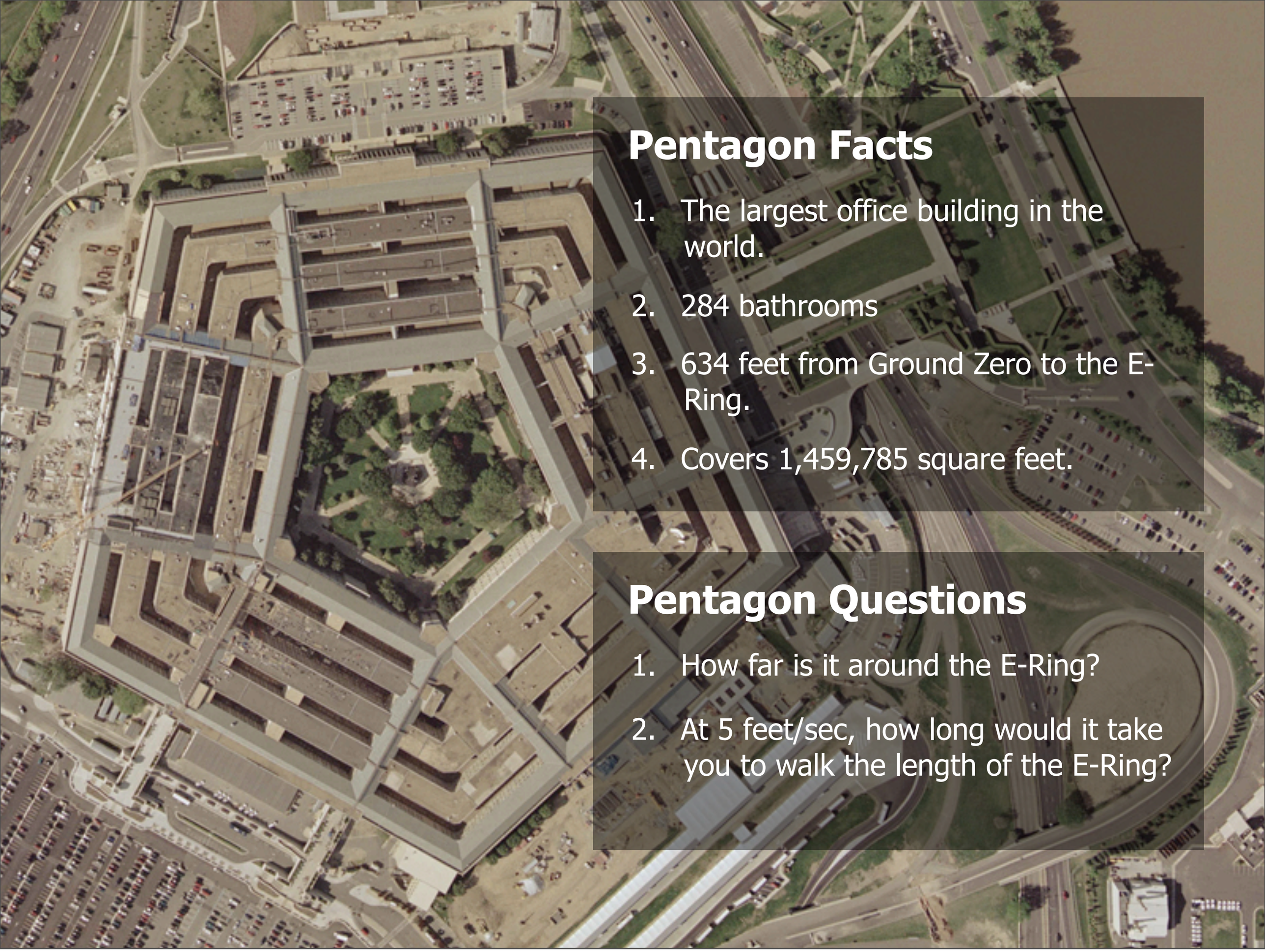
p = [redacted]

s = [redacted]

a = [redacted]

New vocabulary. Now develop the formula at the board using these variables. Talk about p = ns

Ask them to ID the building. After they answer, the Pentagon, the teacher is encouraged to ask obliviously, ... and what kind shape is the Pentagon?



They built twice as many bathrooms as necessary due to segregation. The center was thought to be the most likely site of a nuclear attack and called ground zero. The rings are named A-E from the center outwards.

6. Classwork

pg. 427 // #1 - 8, 12, 14 (skip 6)

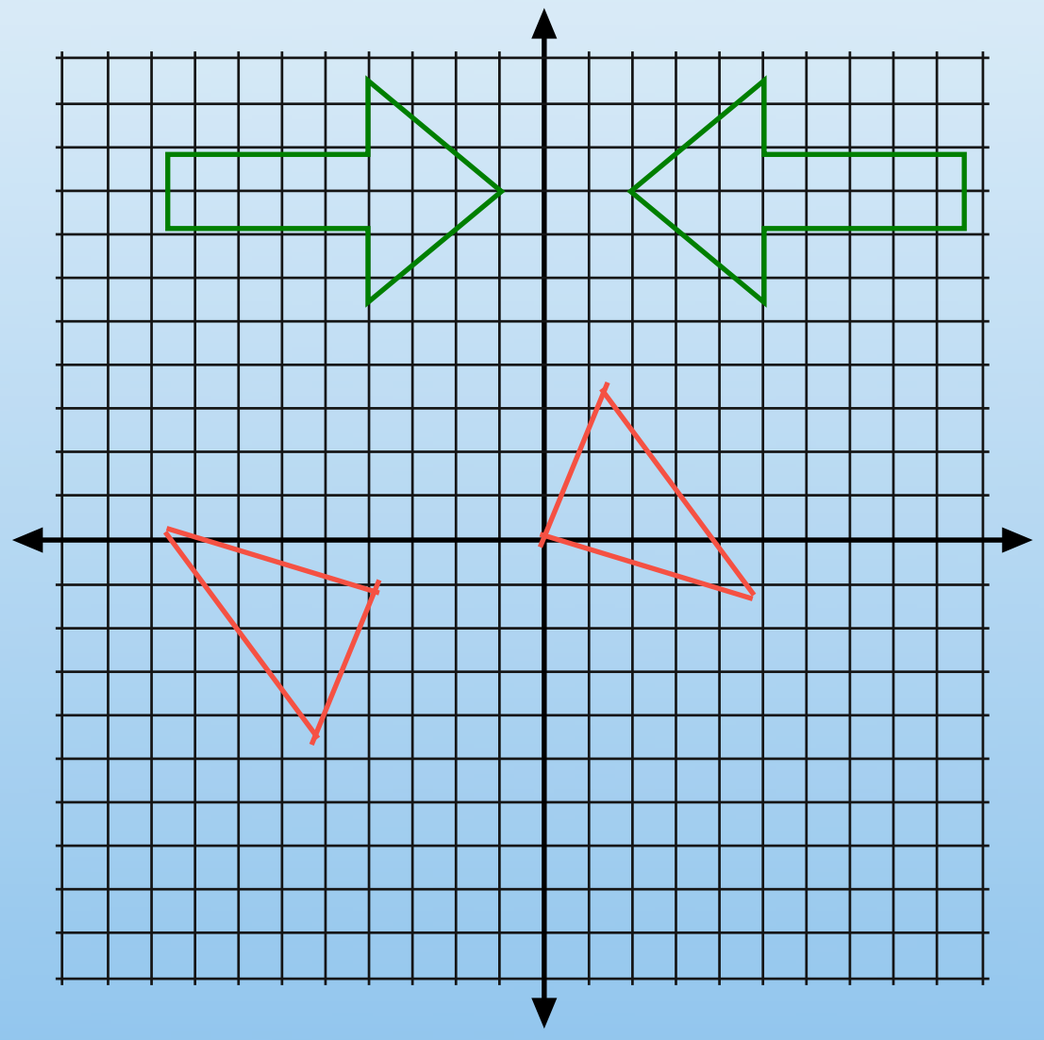
7. Answers

1. 2091.6 sq. cm.
2. 74 cm
3. 256 cm
4. 33 sq. cm.

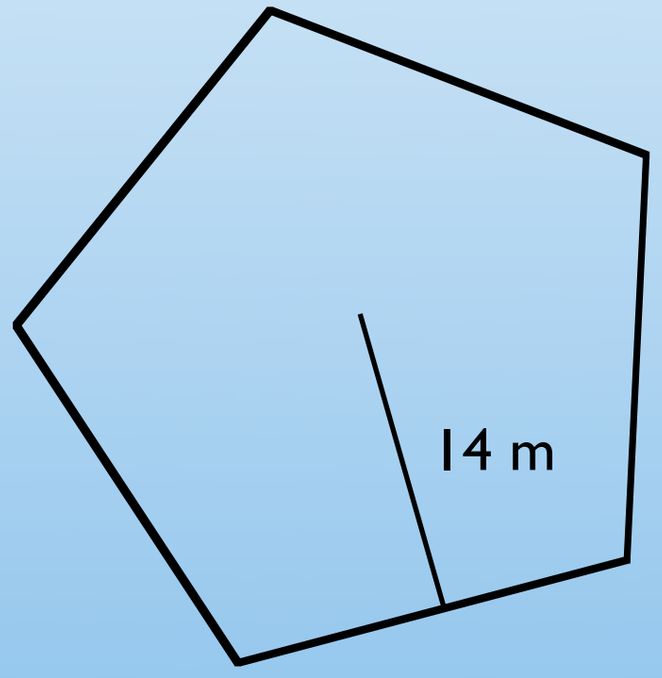
Day 64

1. Opener

a & b) Give the translation.



c) What is the side length of a regular pentagon with area = 105 meters, and apothem = 14 meters?



e) What is the only word in the English language that ends with -mt?

dreamt

http://www.dailymail.co.uk/pages/live/articles/news/news.html?in_article_id=509718&in_page_id=1770

It is more than 1,000 yards long, covers 20 acres, had a 115ft deep end and holds 66 million gallons of water.

http://www.dailymail.co.uk/pages/live/articles/news/news.html?in_article_id=509718&in_page_id=1770

It is more than 1,000 yards long, covers 20 acres, had a 115ft deep end and holds 66 million gallons of water.

http://www.dailymail.co.uk/pages/live/articles/news/news.html?in_article_id=509718&in_page_id=1770

It is more than 1,000 yards long, covers 20 acres, had a 115ft deep end and holds 66 million gallons of water.

http://www.dailymail.co.uk/pages/live/articles/news/news.html?in_article_id=509718&in_page_id=1770

It is more than 1,000 yards long, covers 20 acres, had a 115ft deep end and holds 66 million gallons of water.

CST Toolkit

Released Question #9

Which figure can serve as a counterexample to the conjecture below?

> If one pair of opposite sides of a quadrilateral is parallel, then the quadrilateral is a parallelogram.

A. rectangle

B. rhombus

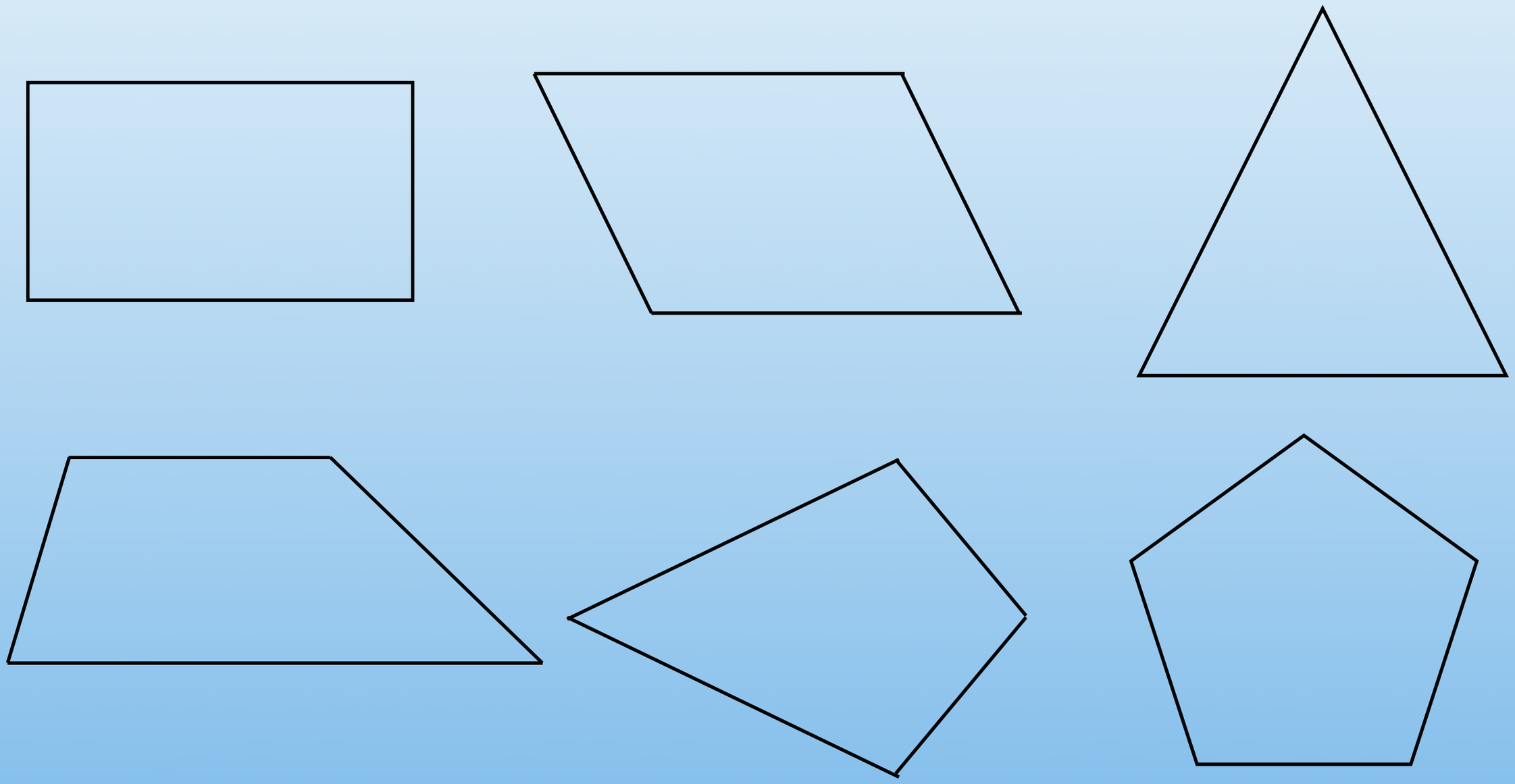
C. square

D. trapezoid

2. Feltron Survey

2. Pick's Theorem

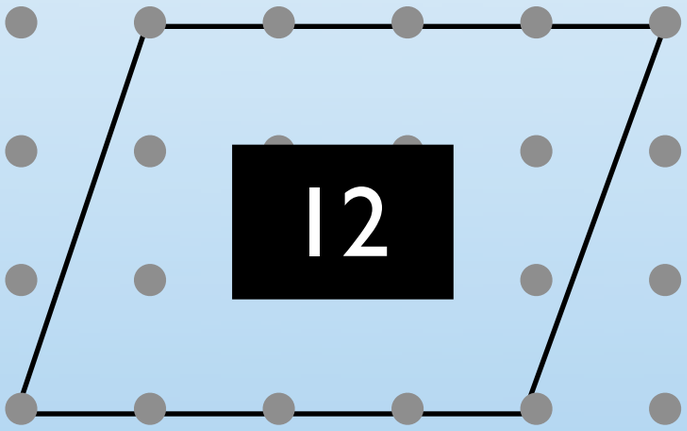
What is the area?

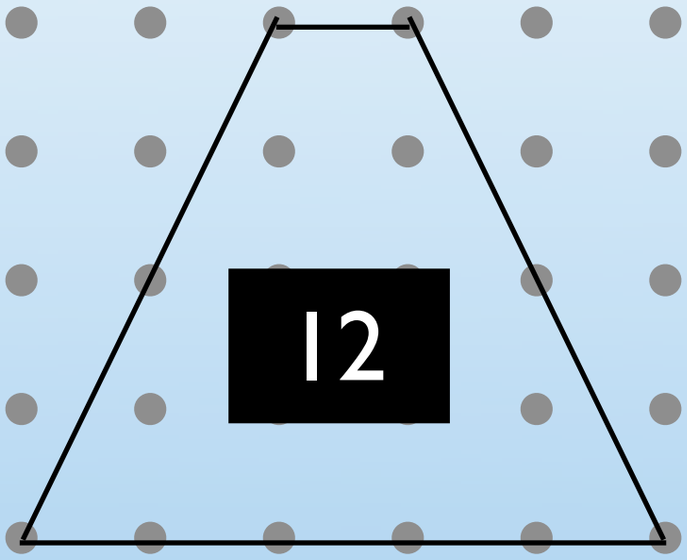



14cm
10cm

2. Pick's Theorem

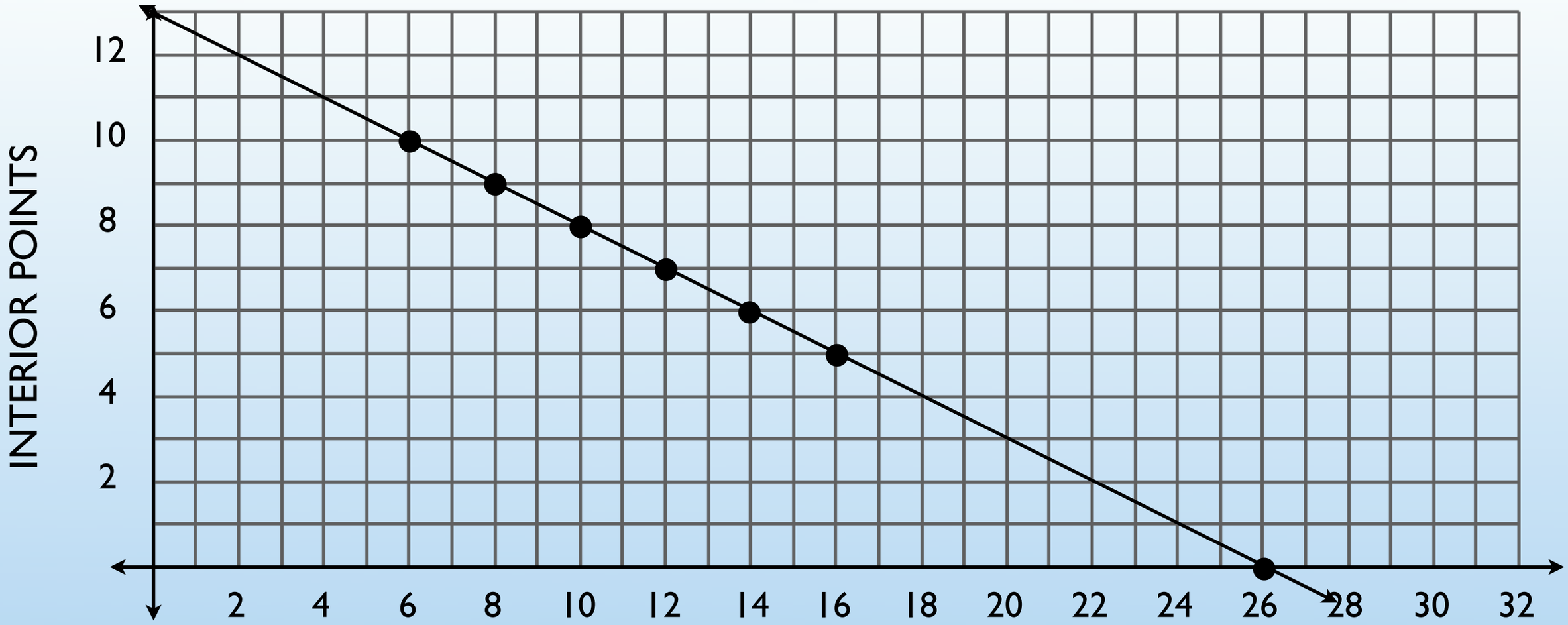
What is the area?





SHAPE	A	B	C	D	E	F	G	H	I	J
INTERIOR POINTS	6	8	6	9	8	9	5	10	7	0
BOUNDARY POINTS	14	10	14	8	10	8	16	6	12	26
AREA	12	12	12	12	12	12	12	12	12	12

Once people start noticing the area is 12 for all of them, let them skip the rest. "See, this guy Pick -- that's Georg Pick, only one "e" in Georg -- found out that the only thing that matters is the boundary points and the interior points." Have them count those points.

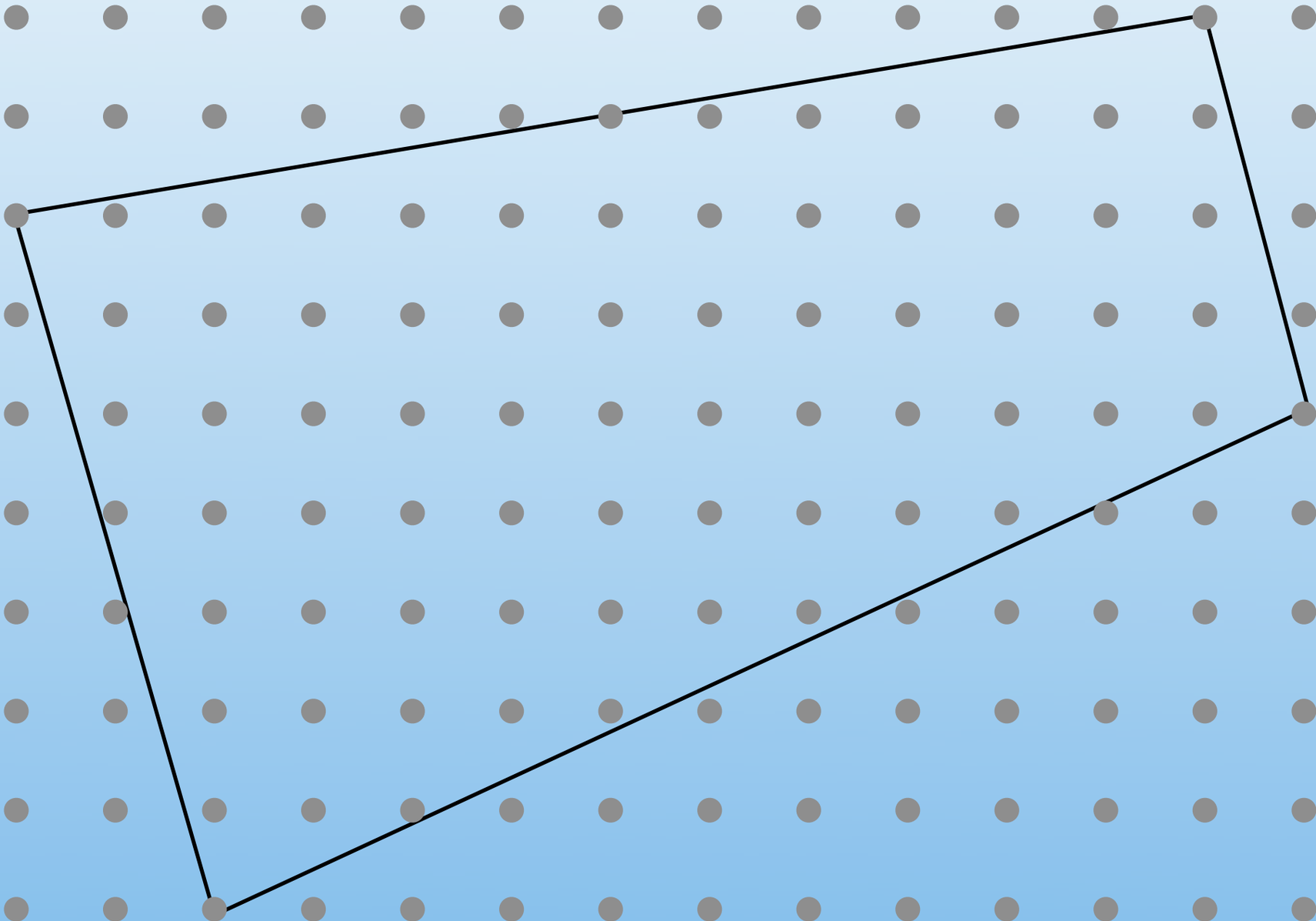


SHAPE	A	B	C	D	E	F	G	H	I	J
INTERIOR POINTS	6	8	6	9	8	9	5	10	7	0
BOUNDARY POINTS	14	10	14	8	10	8	16	6	12	26
AREA	12	12	12	12	12	12	12	12	12	12

Just a visual representation that there's, indeed, a pattern. I asked my class to see if they could find a way to turn 6 and 14 into 12 that also worked for 5 and 16, 10 and 6, etc. Several got it. Some very quickly.

2. Pick's Theorem

What is the area?



Test it out on our quadrilateral.


14cm
0cm

3. **Pick's Classwork**

   Worksheet + pg. 432 // #1 - 4

4. **Break**

5. **Show and Tell**

6. **Treasure Hunt!**

7. **Test**

Worksheet Answers:

#1. B = 8, I = 12, A = 15
#2. B = 5, I = 35, A = 36.5
#3. B = 12, I = 39, A = 44
#4. B = 8, I = 32, A = 35
#5. B = 16, I = 30, A = 37

The treasure hunt is a kick. You post ten multiple-choice questions around the room. Students form groups or go solo and solve any problem they want. A correct answer sends them to another question somewhere in the room. They've done it correctly if they hit each of the ten questions in the right order. Hard to set up. Infinitely re-usable.

Treasure hunt answer: 1 - 5 - 9 - 2 - 4 - 7 - 3 - 6 - 8 - 10