

MODELING WITH GEOMETRY

Math Lib Test Review

Last summer, my mom and dad took me and

(1) _____ on a trip to

(2) _____. The weather there is very

(3) _____! Northern

(2) _____ has many

(4) _____, and they make

(5) _____ (6) _____ there.

Many people also go to (7) _____ to

(8) _____ or see the

(9) _____. The people that live there love to

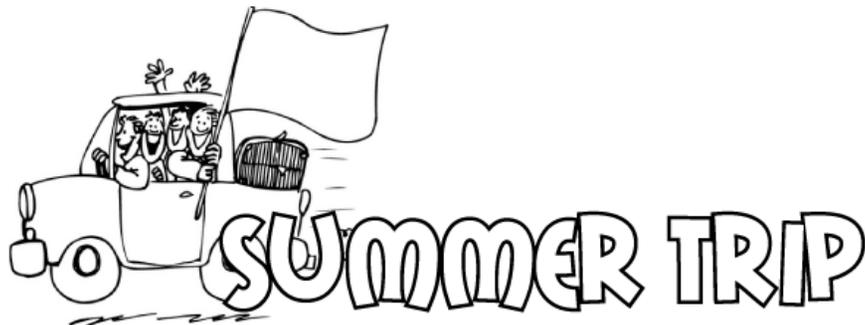
eat (10) _____ and are very proud of their big

(11) _____. They also like to

(12) _____ in the sun and swim in the

(13) _____! It was a really

(14) _____ trip!



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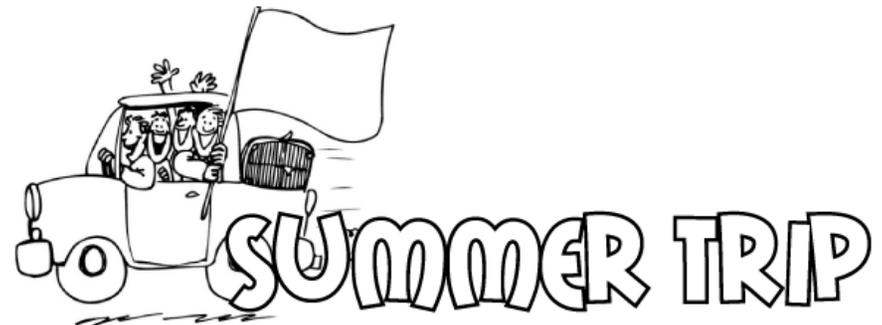
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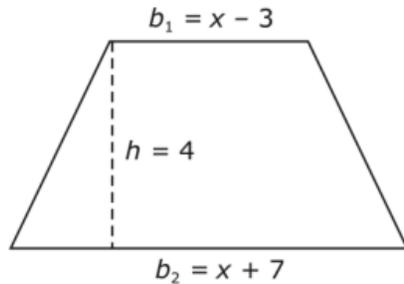
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1.

The area of a trapezoid is found using the formula $A = \frac{1}{2}h(b_1 + b_2)$, where A is the area, h is the height, and b_1 and b_2 are the lengths of the bases.

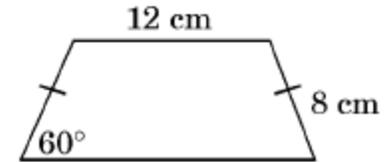


What is the area of the above trapezoid?

- | | |
|-------------------------|----------------|
| a) $A = 4x + 2$ | Kelly Clarkson |
| b) $A = 2x^2 + 4x - 21$ | Brad Pitt |
| c) $A = 4x + 8$ | Nick Jonas |
| d) $A = 2x^2 + 8x - 42$ | P-Diddy |

2.

What is the area of the trapezoid?

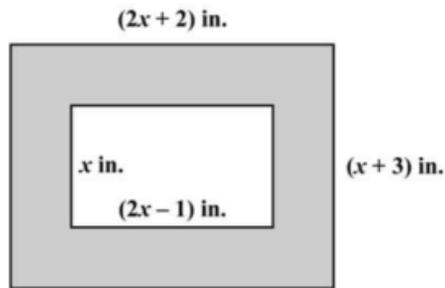


- a) 221.7 cm^2
- b) 110.9 cm^2
- c) 128.0 cm^2
- d) 192.0 cm^2

- Afghanistan
- Antarctica
- Amsterdam
- New England

3.

Harriet had a rectangular-shaped piece of construction paper. She cut a smaller rectangular shape out of the center. The dimensions, in terms of x , of the two rectangles are shown below.

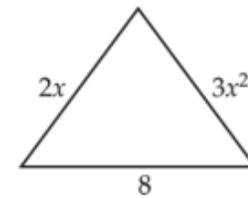


What is the area of the shaded part of the construction paper after Harriet cut out the smaller rectangle?

- | | |
|----------------------------|--------------|
| a) $(9x + 6) \text{ in}^2$ | invigorating |
| b) $(9x + 5) \text{ in}^2$ | beautiful |
| c) $(8x + 5) \text{ in}^2$ | taciturn |
| d) $(7x + 6) \text{ in}^2$ | refreshing |

4.

Look at the triangle below.

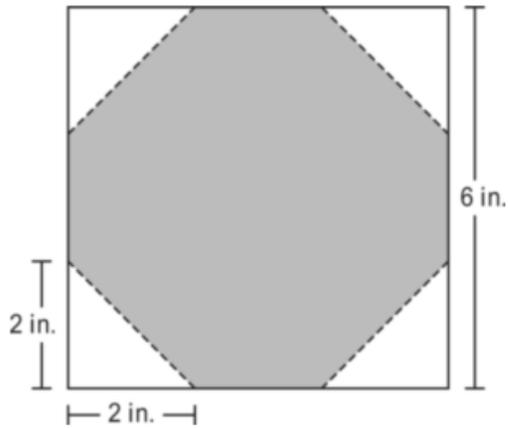


Which expression represents the perimeter of this triangle?

- | | |
|--------------------|-------------------|
| a) $3x^2 + 2x + 8$ | bottles of lotion |
| b) $3x^2 - 2x - 8$ | strange fish |
| c) $(3x^2)(2x)(8)$ | polar bears |

5.

Four congruent right triangles are cut off the corners of a square. The diagram below shows the dimensions of the square and the congruent right triangles.



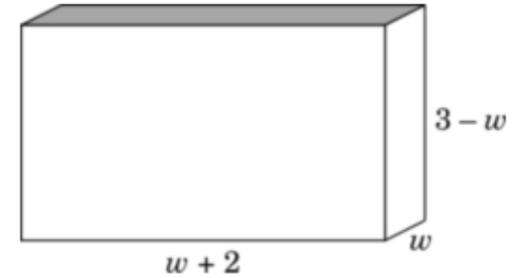
What is the area of the shaded part of the diagram?

- a) 18 in^2
- b) 20 in^2
- c) 28 in^2
- d) 34 in^2

- purple
- blue
- red
- green

6.

The dimensions of this rectangular prism are given algebraically.



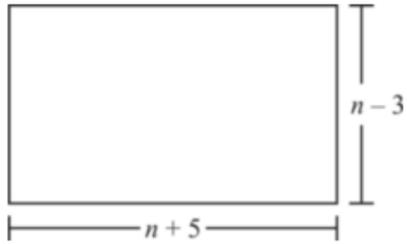
What is the *approximate* width (w) that will maximize the volume?

- a) 1 unit
- b) $1 \frac{1}{2}$ units
- c) $1 \frac{3}{4}$ units
- d) 2 units

- pants
- nalgene's
- toothpicks
- TOM's

7.

A rectangle and expressions representing its dimensions, in inches, are shown below.

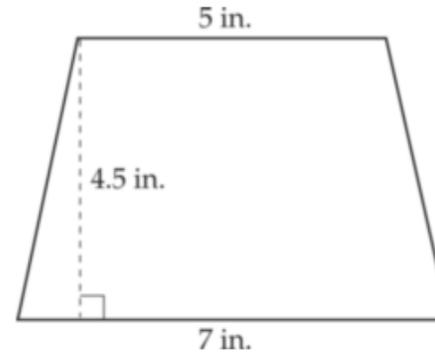


- a) $n^2 + 8n - 15$
- b) $n^2 + 2n - 15$
- c) $n^2 - 2n - 15$
- d) $n^2 - 8n - 15$

- Kenya
- grandma's house
- My house
- the secret garden

8.

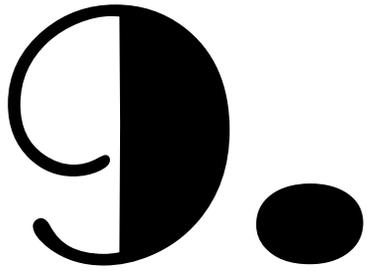
A steel tool in the shape of a trapezoid has the dimensions shown below.



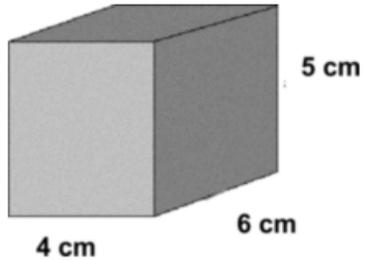
Note: The figure is not drawn to scale.

How many square inches of steel are required to make *twenty* tools?

- | | |
|----------------------|--------------|
| a) 21 square inches | eat |
| b) 420 square inches | play cards |
| c) 27 square inches | chew gum |
| d) 540 square inches | blow bubbles |

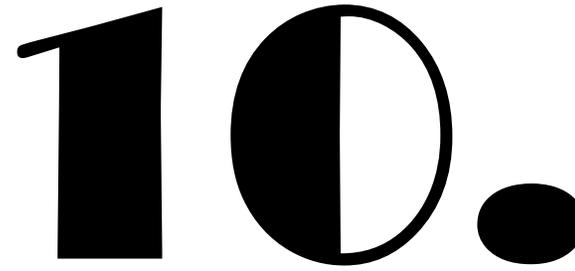


Charlene was asked to analyze the rectangular prism shown.



Which set of measurements describes the dimensions of a rectangle if Charlene wanted to create a similar prism?

- | | |
|-----------------------|-------------|
| a) length 6, width 4 | blue birds |
| b) length 5, width 3 | cats |
| c) length 12, width 8 | ghosts |
| d) length 10, width 5 | polar bears |



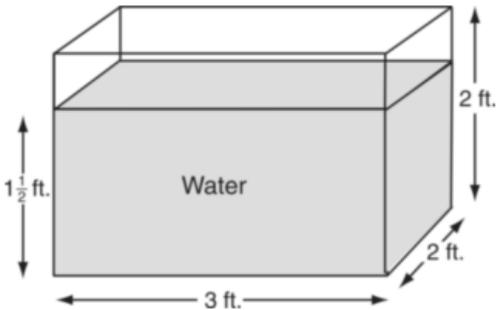
1

Which polynomial is equivalent to $(2y - 3)^2$?

- | | |
|---------------------|-----------|
| a) $4y^2 + 6y - 9$ | boogers |
| b) $4y^2 - 12y + 9$ | snakes |
| c) $4y^2 + 9$ | ostrich |
| d) $4y^2 + 6y - 9$ | blow pops |

11.

Jerry poured water to a height of $1\frac{1}{2}$ feet into a new aquarium with dimensions shown below.



One cubic foot of water weighs approximately 62 pounds. What is the weight of the water that Jerry put in the aquarium?

- a) 403 pounds
- b) 465 pounds
- c) 558 pounds
- d) 744 pounds

- trees
- elbows
- paperclips
- scissors

12.

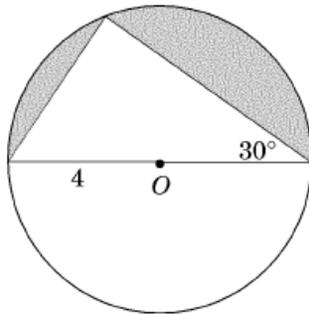
Tina and Adam are filling boxes with packing material. Tina's box is 2 inches tall. Adam's box is 3 inches tall. Both boxes have the same length and width. How does the volume of Tina's box compare with the volume of Adam's box?

- a) Tina's is $\frac{1}{2}$ the volume of Adam's
- b) Tina's is $\frac{2}{3}$ the volume of Adam's
- c) Tina's is 2 times the volume of Adam's
- d) Tina's is $\frac{1}{5}$ times the volume of Adam's

-
- a) ride bikes
 - b) pick noses
 - c) pet dogs
 - d) run through the sprinklers

13.

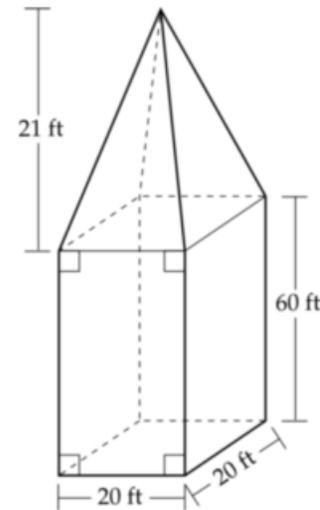
What is the *approximate* area of the shaded region?



- a) 8.57 square units
 - b) 8.70 square units
 - c) 9.13 square units
 - d) 11.28 square units
- ocean
bath tub
liquid soap
shampoo

14.

The heating system for the building shown below can raise the temperature 10°F at a rate of 150 cubic feet per minute. Note: The figure is not drawn to scale.



Note: The figure is not drawn to scale.

How many minutes will it take to raise the temperature of the building 10°F ? Round the answer to the nearest minute.

- a) 72 minutes
 - b) 160 minutes
 - c) 179 minutes
 - d) 216 minutes
- pleasurable
creepy
bizarre
mind-numbing

MODELING WITH GEOMETRY

Math Lib Test Review Answers

Last summer, my mom and dad took me and (1) **Nick Jonas** on a trip to (2) **Antarctica**. The weather there is very (3) **invigorating!** Northern (2) **Antarctica** has many (4) **bottles of lotion** and they make (5) **red** (6) **toothpicks** there. Many people also go to (7) **grandma's house** to (8) **blow bubbles** or see the (9) **ghosts**. The people that live there love to eat (10) **snakes** and are very proud of their big (11) **paperclips**. They also like to (12) **pick noses** in the sun and swim in the (13) **shampoo!** It was a really (14) **bizarre** trip!

