

Places they have never been

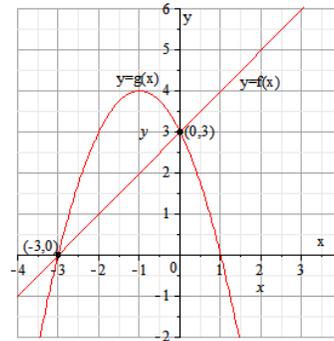
- The ratio of flour to water in a flour water mixture is 3 to 2. If 6 more cups of water are added to the mixture, how many cups of flour must be added to keep the ratio at 3 to 2?
 - 4
 - 6
 - 9
 - 11
 - 12

APCR Alternate Final MAA 8/30/2013

- If G is a function so that $G(m)$ represents the amount of gas (in gallons) used for driving m miles, which one of the following represents the average gallons per mile for a distance of 5 miles?
 - $\frac{G(m+5)-G(5)}{m}$
 - $\frac{G(m+5)}{5}$
 - $\frac{G(m+5)}{m+5}$
 - $\frac{G(m+5)-G(m)}{5}$
 - $\frac{G(m+5)-G(m)}{m}$

CCR Alternate B 12, 2011 MAA

- Use the graphs of f and g to solve $g(x) > f(x)$.
 - $x > -3$
 - $-3 < x < 1$
 - $x > 0$ and $x < -3$
 - $-3 < x < 0$
 - $0 < x < 1$

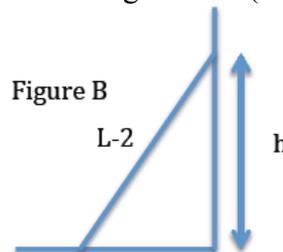
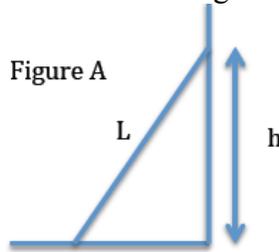


CCR Alternate B 12, 2011MAA

- The numbers in the sequence 2, 7, 12, 17, 22, ... increase by fives. The numbers in the sequence 3, 10, 17, 24, 31, ... increase by sevens. The number 17 occurs in both sequences. If the two sequences are continued, what is the next number that will be seen in both sequences?

TIMSS 1995 Release Item

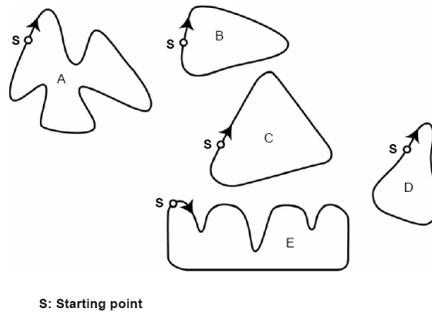
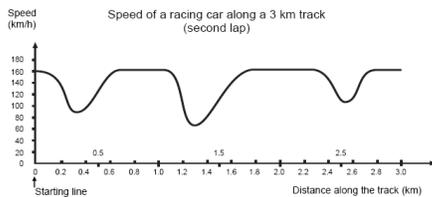
5. A ladder leaning against a vertical wall reaches a height of h feet as shown in Figure A. A ladder that is 2 feet shorter is leaned against the same wall and also reaches height of h feet as in Figure B. Which of the following is true? (Figures not to scale.)



- A) The slope of the shorter ladder is less than the slope of the longer ladder.
- B) The slopes of the two ladders are the same.
- C) The slope of the longer ladder is 2 more than the slope of the shorter ladder.
- D) The slope of the shorter ladder is $1/2$ the slope of the longer ladder.
- E) The slope of the shorter ladder is larger than the slope of the longer ladder.

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6. This graph shows how the speed of a racing car varies along a flat 3 kilometer track during its second lap.

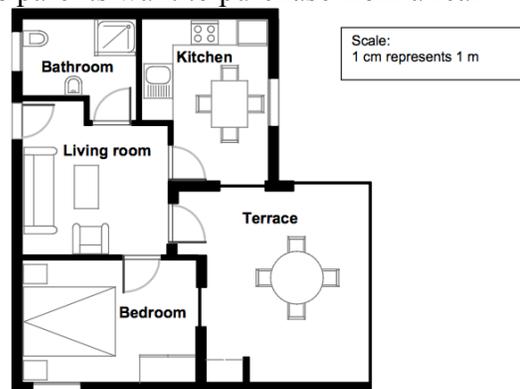


To the right are pictures of five tracks. Along which one of these tracks was the car driven to produce the speed graph shown earlier?

PISA Release Item M159: Speed of Racing Car

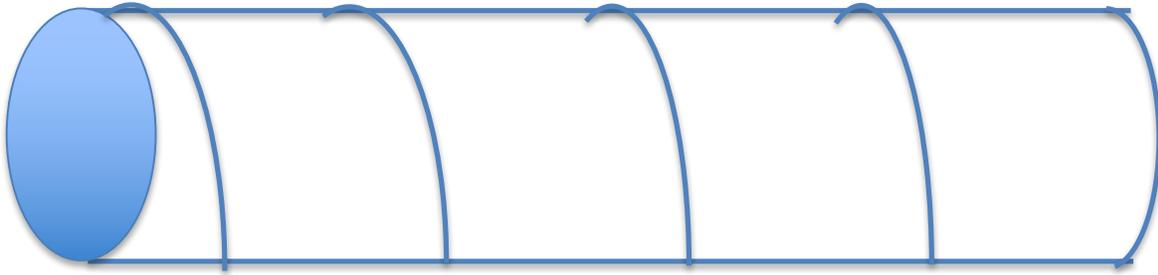
7. This is the plan of the apartment that George's parents want to purchase from a real estate agency. To estimate the total floor area of the apartment (including the terrace and the walls), you can measure the size of each room, calculate the area of each one and add all the areas together.

However, there is a more efficient method to estimate the total floor area where you only need to measure 4 lengths. Mark on the plan above the **four** lengths that are needed to estimate the total floor area of the apartment.



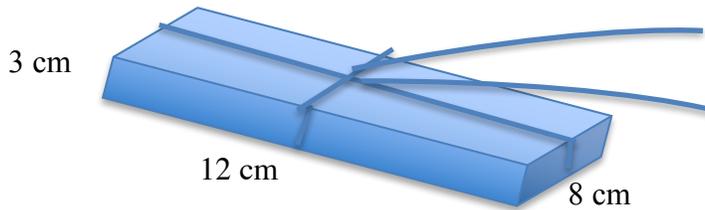
PISA 2012 Release Item *PM00FQ01 - 0 1 9*
https://nces.ed.gov/surveys/pisa/pdf/items_math2012.pdf

8. A string is wound symmetrically around a circular rod. The string goes exactly 4 times around the rod. The circumference of the rod is 4 cm, and its length is 12 cm. Find the length of the string. Show all your work.



TIMSS 1995 Release item special population
http://timssandpirls.bc.edu/timss1995i/TIMSSPDF/C_items.pdf

9. Stu wants to wrap some ribbon around a box as shown and have 25 cm left to tie a bow.



How long a piece of ribbon does he need?

1. 46 cm
2. 52 cm
3. 65 cm
4. 71 cm
5. 77 cm

TIMSS 1995 Release Item http://timssandpirls.bc.edu/timss1995i/TIMSSPDF/C_items.pdf

10. Create a story that could be represented by the graph below.

