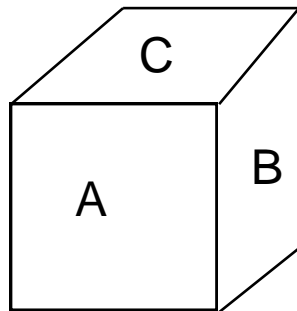
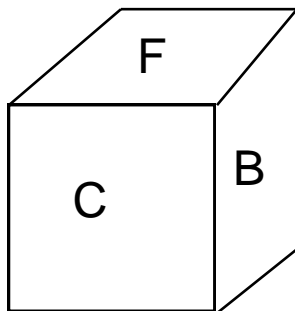
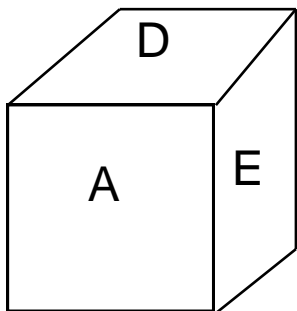
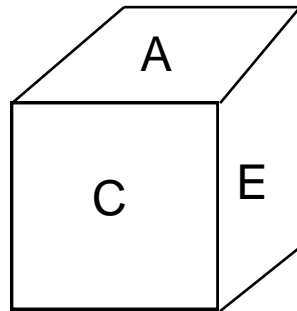
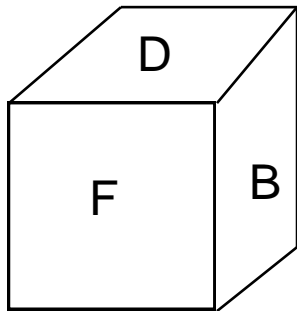
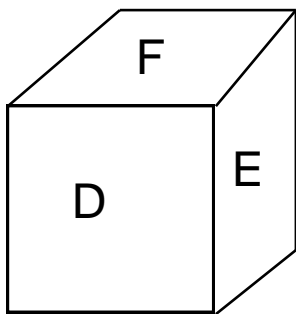


Problem Solving

1 A floor tiler charged \$250.00 to tile a rectangular room. His next job is to tile the floor of a rectangular room which is twice as long and twice as wide. How much should he charge for this larger room? (note the answer is NOT \$500)

2 Here are 6 different views of the same cube.

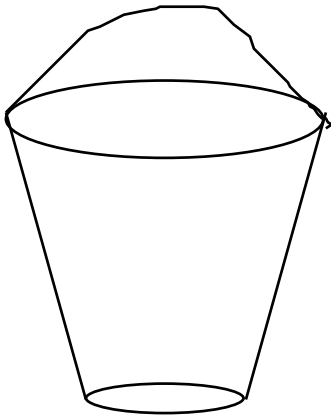


- a) What letter is on the opposite face to F? _____
- b) What letter is on the opposite face to E? _____
- c) What letter is on the opposite face to C? _____

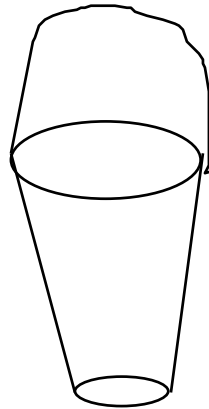
3 Ms. Craig is buying Christmas presents for her 6 children to give one another. Each child gives a present to each of the others. How many presents must she buy?

- 4 If your doctor gave you 3 pills and told you to take one pill every half hour, how long would they last?
- 5 A coin is placed on a table. How many coins of the same size can be placed around it, touching it and each other? When you have found out how many, try to explain why.
- 6 Divide \$115 between Alan, Brian and Chris such that Alan will have \$20 more than Brian and \$30 more than Chris.
- 7 What rational number lies mid-way between $\frac{1}{6}$ and $\frac{1}{8}$? [Not $\frac{1}{7}$]
- 8 Two numbers differ by 54 and they are composed of the same **two digits** reversed. Find the numbers.
- 9 Find the patterns.
- a) 12, 7, 2, _____
- b) 3, -6, 12, _____
- c) $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, _____
- d) $\frac{1}{3}$, $\frac{4}{7}$, $\frac{8}{12}$, $\frac{13}{18}$, _____
- e) 1, 3, 6, 10, 15, _____
- f) 1, 3, 9, 27, 81, _____
- g) 1, 0.5, $0.\overline{3}$, 0.25, 0.2 _____
- h) 32, 48, 72, 108, 162 _____
- i) 1, 4, 27, 256, 3125 _____

- 10 The containers below hold exactly 8 litres and 3 litres respectively. There are no other markings on the containers. The puzzle is to find a way of getting exactly 4 litres of water into the larger container.

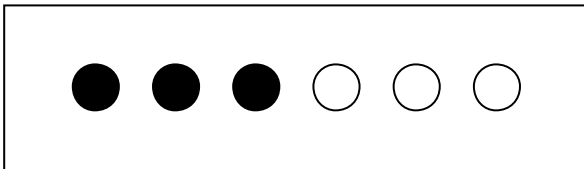


8 litres



3 litres

11

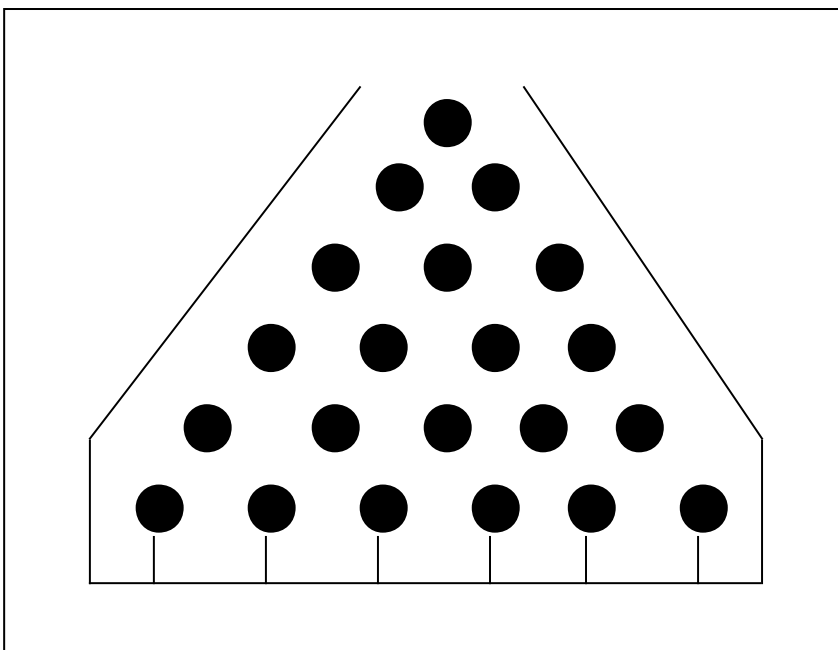


The diagram represents a row of 6 glasses; the 3 on the left are full and the 3 on the right are empty.

By touching ONE glass only, change the arrangement to:

Full, empty, full, empty, full, empty.

12



64 Pinballs are dropped into a chute at the top of this array of obstacles.

At each obstacle, half the balls will go left and half go right.

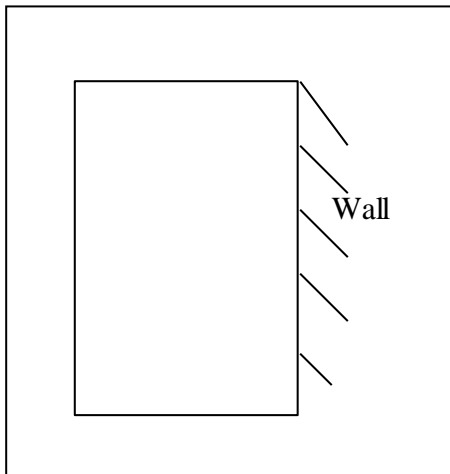
How many pinballs will end up in each section at the bottom?

- 13 Arthur can do a task in 4 days and Bill can do it in 5 days. How long will it take if they both worked together?
- 14 At what time between 7 and 8 o'clock will the two hands of a clock be in a straight line? The answer is NOT 7 : 30
- 15 The minute hand of a clock is 16.5 cm long. How far does it move in 22 mins?
- 16 The organisers of a rock concert featuring "*Sue and the MacBars*" are discussing admission charge. They estimate that if they charge \$35 per ticket, 3000 people will attend and for every \$1 by which the price is reduced, 200 more people will attend. What price would bring in the most money?
- 17 What is the temperature that has the same numerical value in both °C and °F?
- 18 In 1784, 13 year old Edward Warren flew in a balloon 1 metre and 10 cms. in diameter. If we assume it was spherical in shape, what was the circumference?
- 19 In 24 hours, how many times does the long hand of the clock pass the short hand?
PASS means that one hand follows, overtakes and then goes past the other!!
- 20 A store prices its items so that when a 5% sales tax is added, the result is a whole number of dollars. What are the selling prices less than \$100?
- 21 A clothesline is tied from the top of each of two poles to the base of the other. One pole is 2m the other is 1m 75cm. How far from the ground do the two cords cross?

22 What 2 - digit number is equal to twice the product of its digits?

23 If amoebas double in volume every minute and it takes 40 minutes to fill a jar.
How long does it take to fill half the jar?

24 A family which owns a goat is planning to grow vegetables but these must be fenced off. If they have 16 metres of fencing wire, what is the maximum rectangular area they can enclose given that an existing wall can be used as one side of the rectangle?



25 If 78 tennis players enter a singles comp. how many matches are needed to determine the winner?

26 How can you split a round clock face so that the sum of the numbers on the two halves are the same?

27 What 6 coins could be used to give a total of \$3.40? Give two solutions.

28 A farmer has chickens and horses. If there are 16 heads and 40 legs on these altogether, how many horses are there?