

# Puzzles



## Gridlock Puzzle 500

Below is a grid containing nine shaded squares, and around each shaded square are eight white squares. However, each white square should contain an integer from 1 to 7. Once filled in, the eight numbers surrounding each shaded square should sum to the number in the shaded square. In addition, no row or column can contain a duplicate number used within a white square. Can you complete the grid?

	26		36		37	
	31		36		39	
	38		26		24	

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### TERMS AND CONDITIONS

#### Prize puzzle

The prize will be awarded for the first correct entry drawn at random from those received before the closing date. The winner's name will be announced in the next edition. Please note, the puzzle editor's decision is final and no correspondence will be entered into. We reserve the right to feature the winner's name in *The Actuary*. Your details will not be passed to any third party in connection with this draw.

## Digit dilemma Puzzle 501

Your friend challenges you to find a 10-digit number where the first digit defines the count of zeros in the number, the second digit defines the count of ones in the number, etc. Lastly, the 10th digit defines the count of nines in the number.

Can you do it?

## Hidden values Puzzle 502

Find the number  $n$  and the digit  $d$  in the equation:

$$[3 \times (300 + n)]^2 = 898,d04$$

without using trial and error.

With thanks to Rod Marshall and Tim Sole for supplying this puzzle

## Will anyone start the bidding? Bridge challenge 21

For the opening bridge challenge of 2012, a question on opening bids. Here we look at some shapely hands, with a point count a little below opening level but the wrong shape and too strong for either a pre-emptive 3-bid or a weak 2-bid. Such hands are quite common, so competing sensibly with them is an important skill. Use the 'Rule of 20'. Add the number of cards in the two longest suits to the number of points, and if this comes to 20 or more CONSIDER opening.

1	2	3	4	5
♠ AQ865	♠ 5	♠ AJ865	♠ AJ65	♠ AJ865
♥ KJ742	♥ 64	♥ K109	♥ K10	♥ -
♦ 5	♦ AQ865	♦ Q10742	♦ Q98742	♦ Q10742
♣ 64	♣ KJ742	♣ -	♣ 3	♣ K109

These all satisfy the 'Rule of 20', but – assuming no interference from your opponents – would you open with them? If so, would you open in 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> position, and how would you plan to rebid?

Bear in mind that an opening suit bid at the one level guarantees a rebid unless your partner has previously passed.



The bridge puzzle has been kindly provided by David Lampert, a fellow of the Institute and Faculty of Actuaries, and a qualified Bridge Union teacher

A useful beginner's guide to bridge can be found at [www.ebu.co.uk/education/learning/default.htm](http://www.ebu.co.uk/education/learning/default.htm)

Please send new puzzle ideas and comments to puzzles editor Claire Bodénès at [puzzles@theactuary.com](mailto:puzzles@theactuary.com)

# SOLUTIONS FOR MARCH 2012

## Treasure hunt Puzzle 494

A treasure hunter found the following message:

From Secret Place to Crossbones Rock  
Pace out what steps you may  
Turn right at rock and pace the same  
And you'll have found Point A

Return to Secret Place and count  
Your steps to Hangman's Tree  
Turn left at tree and now count down  
On nought you're at Point B

Halfway between points A and B  
You'll find my treasure case  
But what a shame you cannot know  
About my Secret Place.

She knows where Crossbones Rock and Hangman's Tree are, but not, unfortunately, the whereabouts of Secret Place. Can you help her find the buried treasure?

**Answer:** You do not need to know where Secret Place is to find the treasure. This is because wherever you stand to follow the instructions you will end up over the treasure. It is buried the same distance again following a turn to the left having walked halfway from Crossbones Rock to Hangman's Tree.

## Football Puzzle 495

In an international soccer tournament, the scores in a certain round were as follows:

Argentina	0	N. Ireland	0
Belgium	1	Wales	4
England	0	Scotland	1
France	1	Spain	2
Germany	1	Brazil	1
Italy	3	Denmark	1
Peru	2	Cameroon	0
Poland	?	Portugal	?

What was the score in the final match? \_\_\_\_\_

**Answer:** Replace each letter in a country's name by the position of the letter in the alphabet. For example, Italy becomes 9 20 11 25. Goals scored is then the smallest difference between any pair of numbers, so Italy scores  $12 - 9 = 3$

The result of the final tie was therefore: Poland 1 Portugal 1

## Division Puzzle 496

Reconstruct the following division, from which all but two of the digits are missing:

$$\begin{array}{r}
 \text{XX8XX} \\
 \text{XX)XXXXXXXX} \\
 \underline{\text{XXX}} \\
 \text{XX} \\
 \underline{\text{XX}} \\
 \text{XXX} \\
 \underline{\text{XXX}} \\
 \text{2}
 \end{array}$$

Answer:

$$\begin{array}{r}
 90809 \\
 12)1089710 \\
 \underline{108} \\
 97 \\
 \underline{96} \\
 109 \\
 \underline{108} \\
 2
 \end{array}$$

## Occupations Puzzle 497

Below are listed 24 occupations:

Architect	Gardener	Money Lender	Taxi Driver
Botanist	Horticulturist	Naturopath	Undertaker
Courier	Innkeeper	Orthodontist	Vicar
Dentist	Jeweller	Postman	Window Cleaner
Engineer	Karate Teacher	Radiologist	Yacht Maker
Footman	Lawyer	Signwriter	Zoologist

Two people with one of these occupations each were talking and this was overheard:

"there is too much space between rose and and and and and crown"

What occupation might the two people have had, and how should the sentence be punctuated?

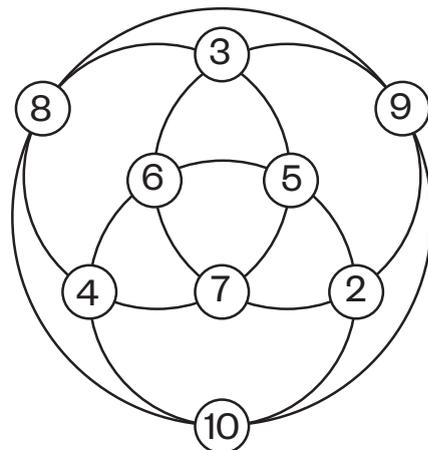
**Answer:** The innkeeper of the Rose & Crown is talking to the signwriter and is saying:

"There is too much space between the 'Rose' and '&', and '&' and 'Crown'"



## Circular fashion Puzzle 498

Insert the numbers from 2 to 10 in the nine small circles, in such a way that the sum of the numbers appearing round each of the four larger circles is the same.



Congratulations to this month's winner, Derrick Prasad, who wins a £50 Amazon voucher