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The Circuit

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Ethanol

Ethanol is one of the renewable biofuels that is attracting more and more interested especially in light of the high crude oil pricing. It can be produced from wheat or corn. It can also be produced using sugar cane.

Ethanol is a fuel additive which when mixed with conventional gasoline acts as an octane booster by increasing the oxygen content. This eliminates the need for harmful chemical additives and results in a cleaner burning fuel with lower emissions. It is blended with gasoline ranging from between 6% and 10%. These blends can be used in any vehicle without the costly engine modifications required for natural gas or methanol.

Carbon dioxide is produced when ethanol burns which in turn is recycled into organic tissue during plant growth. Surely some amongst you recall your biology classes - plants intake carbon dioxide and produce oxygen as a waste product...

Corn is used to produce ethanol due to being the predominant feedstock, the high starch content, low prices and availability. The grain is soaked until the components can be separated mechanically. The germ is used for corn oil, the starch is removed for industrial uses such as industrial alcohols and distillers grains or commercial uses such as sweeteners, degradable plastics, proteins and pharmaceuticals. Protein gluten meal and feeds are sold as animal feed. Carbon dioxide is also collected and used to carbonate beverages and as a freezing agent in the food industry.

The global demand for ethanol is estimated at 27 billion liters per year. Industries are increasing their use of alcohols as a way to control costs and become more environmentally friendly. Brazil is a world leader in the use of ethanol with almost half their cars running on pure ethanol.

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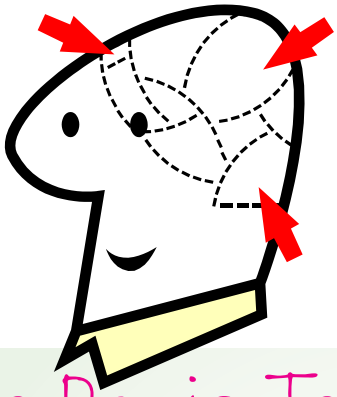

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The Brain Teaser?!?

The correct answer for the March Teaser is E(52)

We found a noticeable decline in right answers for the March issue's question.

The winners are...

Robert Perrin, Lorraine Halchuk, Keith Joss, Grace Munn and Heath Purves - Anixter Winnipeg; Greg Menzies - NCSI Burnaby; Aaron Parker - Texcan Calgary; Derek Muirhead - Texcan Saskatoon; Bill Lahey - Anixter St. John's; Philippe Lamoureux and Guy Lemoine - Anixter Montreal; Patricia Decarie - ECS Laval; Line Blais - Anixter Quebec

Apparently Ontario did not have any correct answers... hmmmmm

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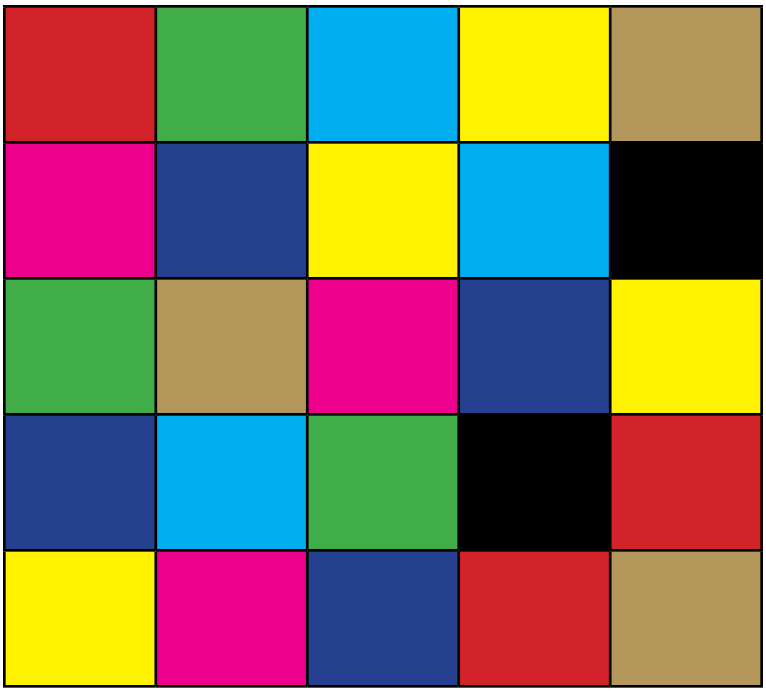

O.K. New Challenge

Let's get away from mathematics and try something visual. Here's the latest challenge:

How many squares are in this grid?

Hint - Think inside the box!

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Western Droppings

Refinery Constraints May Squeeze Synthetic Crude Price, Says Consultant
By Elsie Ross

Edmonton – The rapid growth in Alberta synthetic crude oil may be accompanied by increased discounts due to refinery conversion constraints, an Alberta oilsands conference heard here.

Crude oil pricing is typically based on the refinery configuration for a specific region. There are two types of refinery configurations, the coker and the cracker. A coking refinery, the most complex, converts the entire bbl to light fuel. The cracking refinery, the simplest configuration, converts to gas oil, and sells the residual bottoms as either asphalt or fuel oil.

In the United States, PADD II (Midwest) which is the largest market for Canadian crudes, roughly 34% of refinery capacity is hydrocracking while 11% is coker capacity. In comparison, PADD V (West Coast) has 32% and 17% cracking and coker capacity respectively while in PADD III (the mid-continent), 33% of capacity is cracking and 22% coking.

Purvin & Gertz is forecasting that by 2010, Canada will produce about 1.2 million bbls per day of heavy crude and about 1.1 million bbls of synthetic crude oil. Most heavy crude blends will go to the Midwest with new markets in California and probable new markets in the U.S. Gulf Coast and Asia (China and Korea) beyond 2010, he said.

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Central Crumbs

Although in its early stages, all indications point to American copper giant Phelps Dodge completing a mega deal which will create one of the world's largest mining enterprises.

This deal would see the copper giant purchase Canadian nickel producers Inco and Falconbridge. The combined company will be called Phelps Dodge Inco and have 40,000 employees in 40 different countries.

This is a major gamble considering the uncertainty in recent months of the metals market. They must now deal with any regulatory issues in regards to a deal of this size and nature.

Let's all hope this deal will help bring some stability to this market.

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Eastern Tidbits

According to the aluminum industry in Quebec, the days of huge projects are finished. The governments stand on providing inexpensive electricity will limit any new builds as it tends to focus on exports. Instead, existing facilities will be upgraded and expanded. As it stands, there are about $3 billion in investments that are on hold. The smelters have a tariff of 3.1 cents per kWh, compared to 6.7 cents for residential and 9.5 cents for export.

In an ironic twist, Newfoundland is obliging Hydro Quebec to spend $90 million to refurbish a hydroelectric installation in Labrador. The station serves the city of Schefferville, Quebec exclusively and is not connected to the HQ grid due to the high cost of building transmission lines. HQ own the dam, however, the water rights belong to Newfoundland & Labrador which they refuse to give Quebec. Other generation methods were evaluated however this was found to be the most cost effective. Some are claiming this as a small victory in light of HQ refusal to renegotiate the Churchill Falls contract. Furthermore, should the town of Schefferville be shut down, HQ are obligated to purchase the power generated for the next 40 years.

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