

IRON ORE TO IRON PELLETS

TO ANSWER ALL THE QUESTIONS YOU WILL NEED TO DOWNLOAD THE 'SOURCES, ORIGINS, IRON, STEEL AND ALUMINIUM' APP, FROM THE INTERACTIVE MOBILE APP SECTION OF www.technologystudent.com

LINK

http://www.technologystudent.com/mobapps/materials_sources2.pdf

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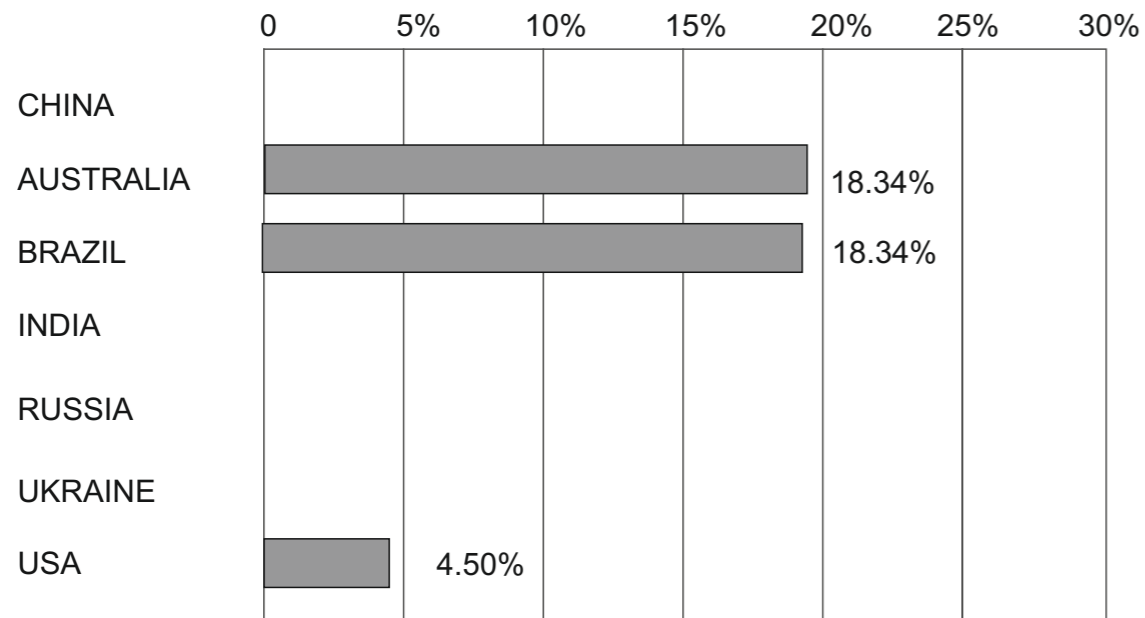
**ARE YOU READY?
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1 NAME THE METAL MOST USED IN THE WORLD.

IRON ORE IS REQUIRED TO PRODUCE THIS METAL. BRIEFLY DESCRIBE ITS EXTRACTION FROM THE EARTH.

2 HOW IS IRON ORE PROCESSED INTO PELLETS?

3 THE TABLE BELOW, SHOWS THE WORLD DISTRIBUTION OF IRON ORE MINING. COMPLETE THE TABLE.



4 WHAT IS THE PROPORTION OF IRON IN MAGNETITE ORE?

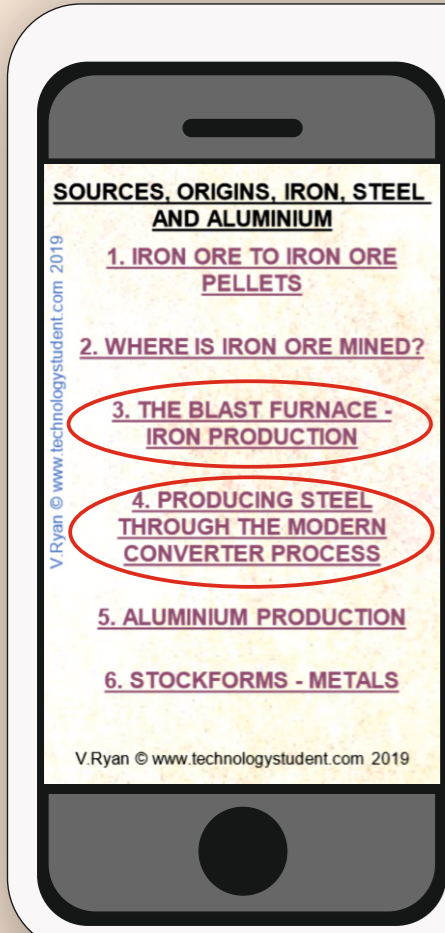
WHAT IS THE PROPORTION OF IRON IN HAEMATITE ORE?

WHAT IS THE IMPORTANCE OF FERRIC OXIDE, IN IRON PRODUCTION?

5 HOW MANY TONNES OF IRON ORE ARE MINED EACH YEAR?

IRON IS REQUIRED FOR THE PRODUCTION OF STEEL. LIST FOUR PRODUCTS MANUFACTURED STEEL.

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THE BLAST FURNACE AND THE CONVERTER PROCESS

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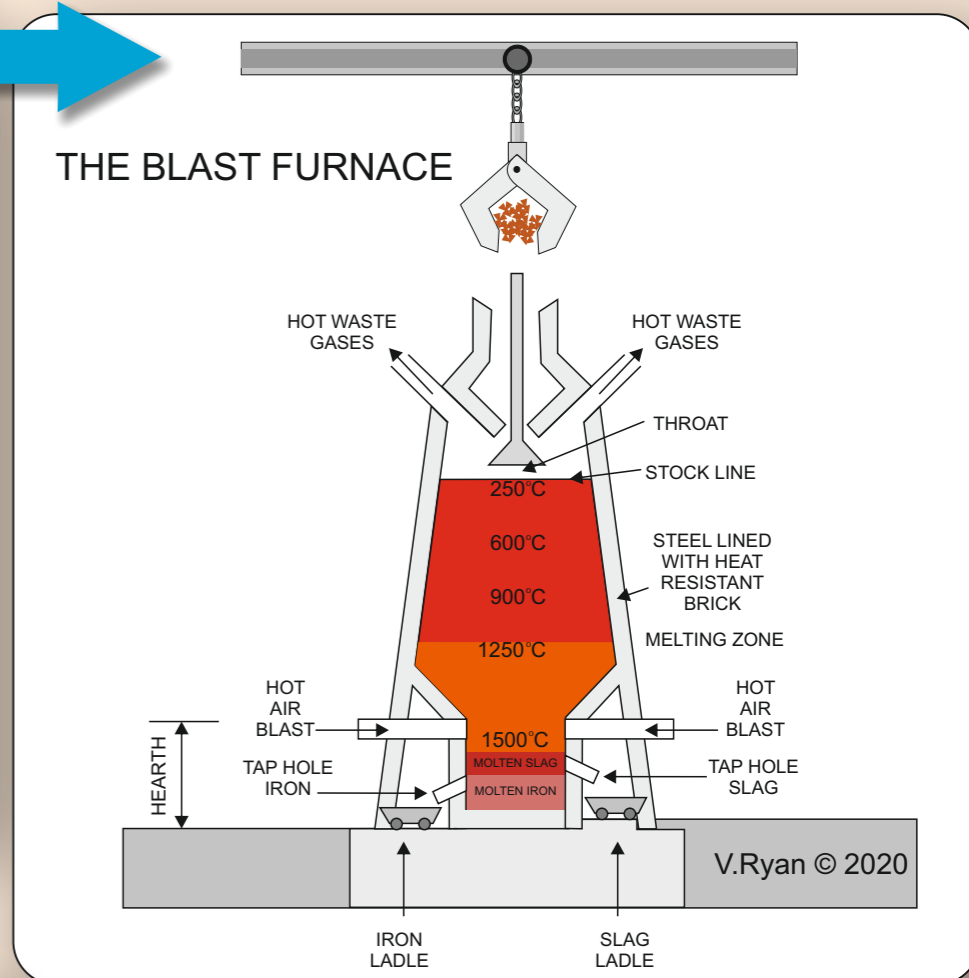
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1 BRIEFLY DESCRIBE THE ROLE OF A BLAST FURNACE IN IRON PRODUCTION. Use the diagram opposite for reference, if required.



2 STEEL IS PRODUCED THROUGH THE MODERN CONVERTER PROCESS. SKETCH A DIAGRAM, THAT SHOWS THIS PROCESS. WRITE AN EXPLANATION IN THE NEXT BOX.

YOUR EXPLANATION / DESCRIPTION

3 THE TABLE BELOW SHOWS THE PROPORTION OF CARBON IN DIFFERENT STEELS. THE AMOUNT OF CARBON IN STEEL, DETERMINES THE GRADE OF STEEL PRODUCED. COMPLETE THE TABLE, BY ADDING THE MISSING PERCENTAGES.

| GRADE OF STEEL | PERCENTAGE OF CARBON |
|---------------------|----------------------|
| LOW CARBON STEEL | |
| MILD STEEL | 0.1 TO 0.33 |
| MEDIUM CARBON STEEL | |
| HIGH CARBON STEEL | 0.6 TO 0.9 |
| TOOL STEEL | |

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ALUMINIUM PRODUCTION

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**ARE YOU READY?
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1

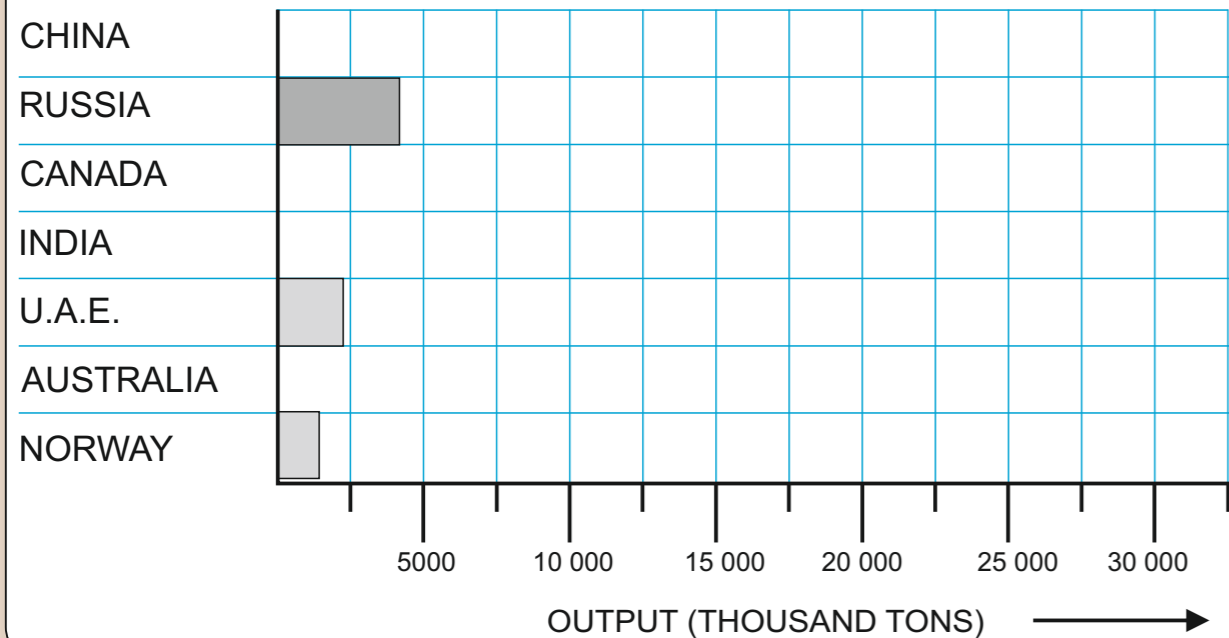
NAME SOME OF THE PRODUCTS MANUFACTURED FROM ALUMINIUM.



PASTE IMAGES OF SOME OF THE PRODUCTS YOU NAMED IN Q1

2

THE TABLE BELOW, SHOWS THE MAIN ALUMINIUM PRODUCERS . COMPLETE THE TABLE.



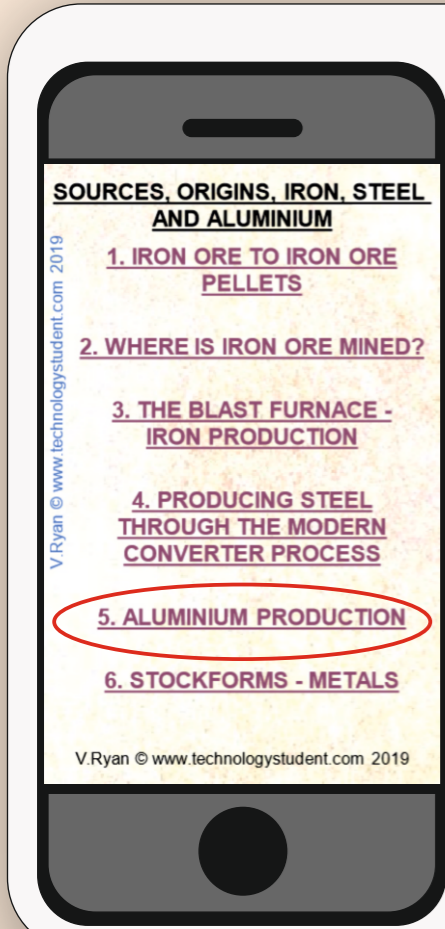
3

DESCRIBE SOME OF THE PROPERTIES OF ALUMINIUM

4

WHAT IS THE ADVANTAGE OF ALLOYING ALUMINIUM WITH ANOTHER METAL / SUSTANCE?

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1 DESCRIBE THE FIRST TWO STAGES OF ALUMINIUM PRODUCTION.
Grinding / crushing to the Digester

2 WHAT IS THE ROLE OF 'SETTLING' AND THE PRECIPITATION TANKS?

3 DESCRIBE THE 'CALCIFICATION PROCESS' AS SHOWN BELOW. Write your description in the next box.



YOUR DESCRIPTION OF CALCIFICATION.

4 THE LAST STAGE ALUMINIUM PRODUCTION IS 'SMELTING'. DESCRIBE THIS PROCESS.

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**STOCK FORMS
ALUMINIUM AND STEEL**

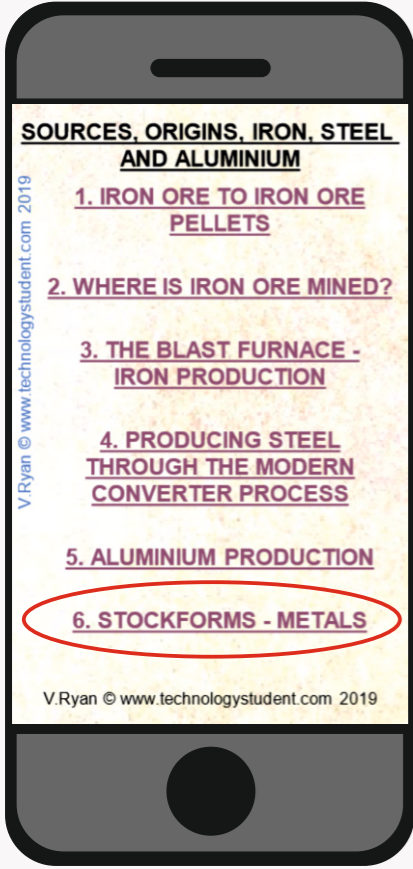
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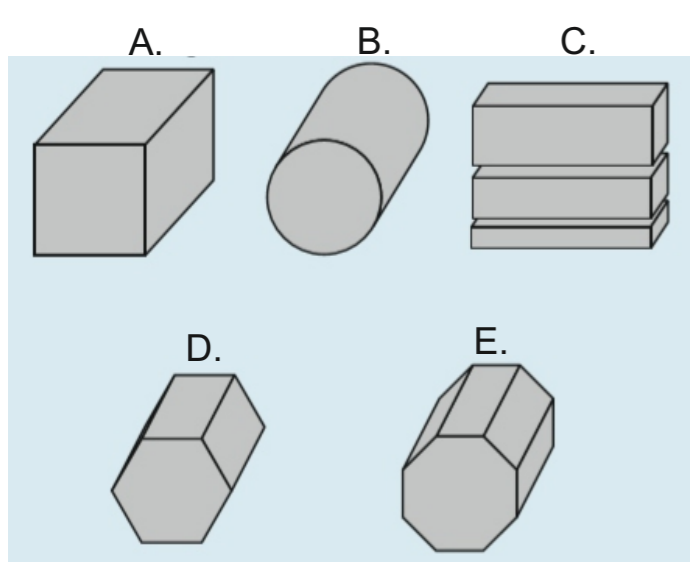


1

NAME AND SKETCH, STEEL / ALUMINIUM HOLLOW SECTIONS, THAT ARE AVAILABLE FROM METAL SUPPLIERS.

2

NAME THE 'SOLID' SECTIONS SHOWN BELOW.



A: _____
 B: _____
 C: _____
 D: _____
 E: _____

3

STEEL AND ALUMINIUM IS SUPPLIED AS SHEETS. LIST FIVE SIZES.

4

WHAT IS MEANT BY THE TERM 'GAUGE', WHEN DEALING WITH SHEETS OF ALUMINIUM AND STEEL? Include example measurements.

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