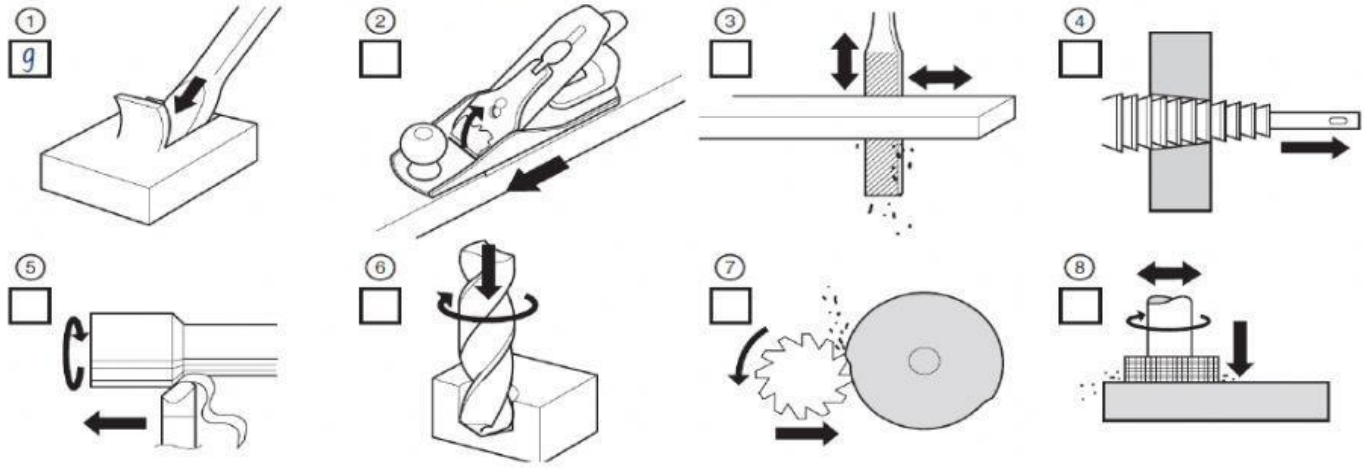
1 Match the diagrams with the descriptions.



a) In **drilling**, a hole is made in a material by a rotating drill. The rotating drill is lowered onto the material under pressure. As chips of metal are cut away by the drill, these are removed from the hole.

b) In **planing**, the cutting tool is at 90° to the material. The tool moves in a straight line. In some planing machines, the tool moves forwards and backwards. In other machines, the material moves and the cutting tool stays still.

c) In **milling**, the material is shaped by a rotating cutter. The teeth of the cutter cut away pieces from the material. Usually, the milling machine stays still, while the material is pushed against it.

d) In **broaching**, a hole is cut through a material. The hole is made by pushing or pulling the broach through the hole. The teeth at one end of the broach are wider than at the other end. First, the smaller teeth make the cut. Then the larger teeth make the finished hole the right size.

e) In **filing**, a file is moved forwards and backwards across a material. The teeth of the file make the material smooth.

f) In **grinding**, a rough wheel without teeth is rotated and the material is pushed against it. In this way, the right amount of material is carefully removed. Grinding is a finishing treatment that is usually carried out at the end.

g) In **chiselling**, the chisel is driven into the face of the material by repeated blows. Chiselling is used to cut pieces out of a material in straight lines. The blade of the chisel can be flat, rounded or triangular.

h) In **turning**, the material is fixed in a machine called a lathe and rotated. A cutting tool is placed against the rotating material and cuts it. This is a way of reducing the diameter of a cylinder by cutting away material from the outside.

2 Underline the correct verb.

1 **A:** Why is she *broaching* / *turning* / *grinding* the panel?
B: Because she needs to make a rough hole from one side to the other.

2 **A:** Why is he *filing* / *chiselling* / *turning* the cylinder?
B: Because the inside is too narrow.

3 **A:** Why is she *drilling* / *filing* / *planing* the material?
B: Because the outside is too rough.

4 **A:** Why is she *chiselling* / *milling* / *grinding* the material and not planing it?
B: Because she needs to cut out a small square section.

5 **A:** Why is he *turning* / *drilling* / *grinding* those holes through the material?
B: He's going to put fixing bolts through the holes.

3 **Write sentences about changes to the duty roster in a car parts factory.**

	8.00 – 12.00	12.30 – 16.00
BERNARD	~~plane flat workpieces~~ mill brake disks	~~chisel screw-heads~~ file brake drums
PEDRO	~~turn bolts~~ plane gear wheels	~~turn drive shafts~~ chisel nuts
MICHAEL	~~grind exhaust pipes~~ turn crankshafts	~~grind valves~~ turn connecting rods
WAYNE	~~file engine blocks~~ turn pistons	~~drill engine blocks~~ grind gear wheels

1 Bernard usually planes flat workpieces in the morning and chisels screw-heads in the afternoon. But today he's milling brake disks in the morning and filing brake drums in the afternoon.

2 Pedro _____

_____.

3 _____

_____.

4 _____

_____.

4 **Read the three job adverts and part of Kurt's CV. Choose the best job for him. Circle A, B or C.**

A

MAXIMA PARTS

Vacant positions for operators at expanding supplier to the automotive industry. Duties include all types of machining and some welding. Must have qualification and experience in setting up and operating welding robots. ONC in Mechanical Engineering (minimum) required.

B

L&M COMPONENTS

Immediate vacancy for Milling Machine Operator to work in growing company supplying components to the oilfield industry. Duties include setting up, operating and maintaining machine tools. Must have HNC in Mechanical Engineering or similar. Should have post-qualification experience of basic drilling and milling.

C

KC METALS

Manufacturer of industrial kitchens requires experienced Metalworker for immediate start. Responsibilities include reading technical drawings, broaching, cutting, sawing, welding and polishing. Must have ONC in Sheet Metalwork or equivalent. Must be skilled in basic welding.

From 2004 until 2006, I (**1**) worked at A&E Gearboxes as a full-time machinist. I (**2**) _____ the company in 2006 and (**3**) _____ a full-time student. From 2006 to 2007, I (**4**) _____ Mechanical Engineering at Glasgow Polytechnic. In 2007 I (**5**) _____ my HNC in Mechanical Engineering. Then in August 2007 I (**6**) _____ work as a Milling Machine Operator at Clyde Outboard Motors. Unfortunately, six months later the company (**7**) _____ out of business. That is the reason why I (**8**) _____ for employment and am able to start work immediately. I (**9**) _____ my CV, which (**10**) _____ full details of my training, qualifications and work experience.

5 **Complete Kurt's CV in 4 with verbs from the box in the correct form.**

award / become / enclose / give / go / leave / look / start / study / ~~work~~