line F. G. is 30° east of north. Also reduce the above readings to one meridian, and plot your proof. Explain how you would correct the above survey if made in a seam considerably inclined.

2. Work out the following series of levels and plot in the form of a section. Horizontal scale, 1 chain to an inch. Vertical scale, 20 feet to an inch. Datum line, 50 feet.

Distance. Chains.	Back Sight. Feet.	Fore Sight. Feet.	Distance. Chains.	Back Sight. Feet.	Fore Sight. Feet.
0·70	1·30	8·85	5·40	8·80	1·12
1·50	8·85	2·30	7·00	2·32	7·05
2·45	13·96	5·40	9·40	1·33	9·96
3·60	5·40	0·52	10·20	3·34	5·87
4·05	12·62	8·80	11·35	5·87	9·10

3. What are the special advantages and disadvantages in the use of the ordinary miners' compass as compared with the theodolite?
4. How may underground and surface-surveys be connected (1) when access is had through workings open to the surface, and (2) when by shaft only?
5. Describe a simple method of determining approximately the true meridian.

APPENDIX V.—Examination of Candidates not Holding a Certificate.

Paper I.—Mines Regulation Chapter.—(*Time*, 2½ *hours.*)

1. Upon whom are penalties imposed for non-compliance with the Act, and for what offences?
2. When is it necessary to work a mine with safety-lamps, and what examinations are then required?
3. Respecting single shafts, what does the Act say?
4. What restrictions are put on the working of coal under the sea?
5. What are the regulations respecting the fencing off of certain workings?
6. Who may not be employed about machinery, above or under ground? and give reasons.
7. State the law respecting explosives, and fully state the conditions in a mine that would govern the application of each section of the law.
8. What restrictions are placed on the operations of prospectors?

APPENDIX VI.—Underground Managers' and Overmen's Examination.

Note.—Papers 1 and 2 of managers' examination are not given to under-managers or overmen.

Paper III.—Ventilation.—(*Time*, 3 *hours.*)

1. What is an air-crossing? and give the size to pass 5,000 cubic feet of air per minute.
2. In an airway, 9 feet by 7 feet, the anemometer makes 425 revolutions per minute. What quantity of air is passing?
3. The temperature in a downcast is 40° Fahr., in the upcast 70° Fahr. What volume of air in the upcast will weigh the same as 1 cubic foot in the downcast?