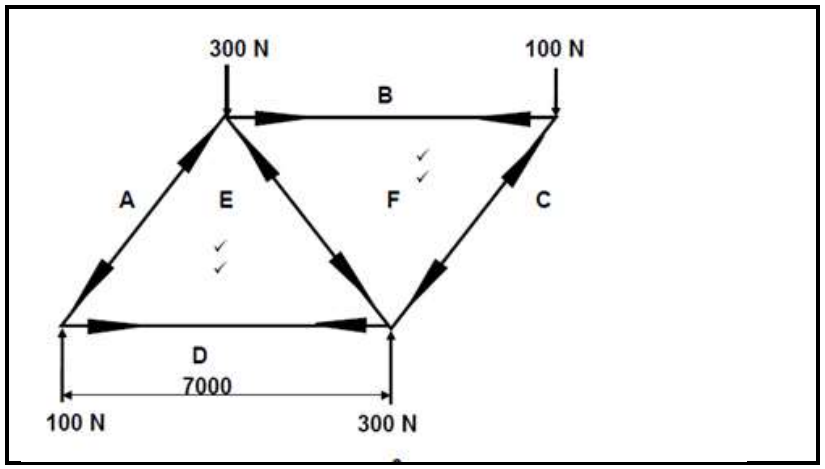
Province of the
EASTERN CAPE
EDUCATION

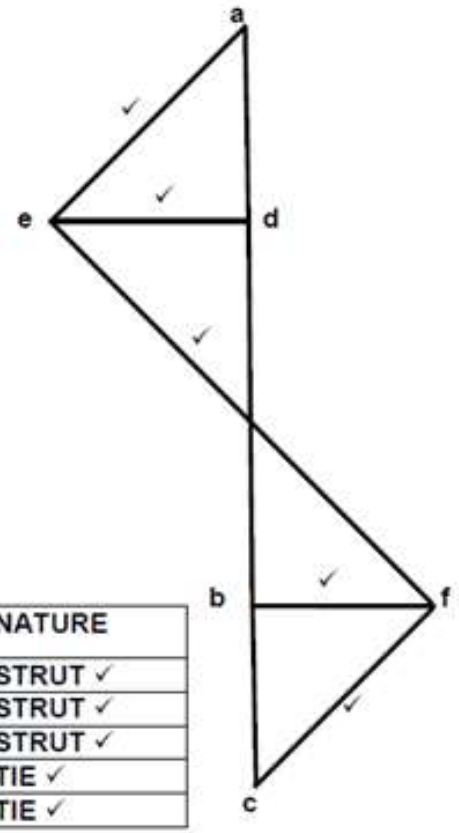
DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)

HOME SCHOOLING SELF-STUDY WORKSHEET ANSWER SHEET

SUBJECT	WELDING & METALWORK	**GRADE**	12	**DATE**	20 MAY 2020
TOPIC	FORCES	**TERM 1 REVISION**	(Please tick)	**TERM 2 CONTENT**	(√)

QUESTION 1



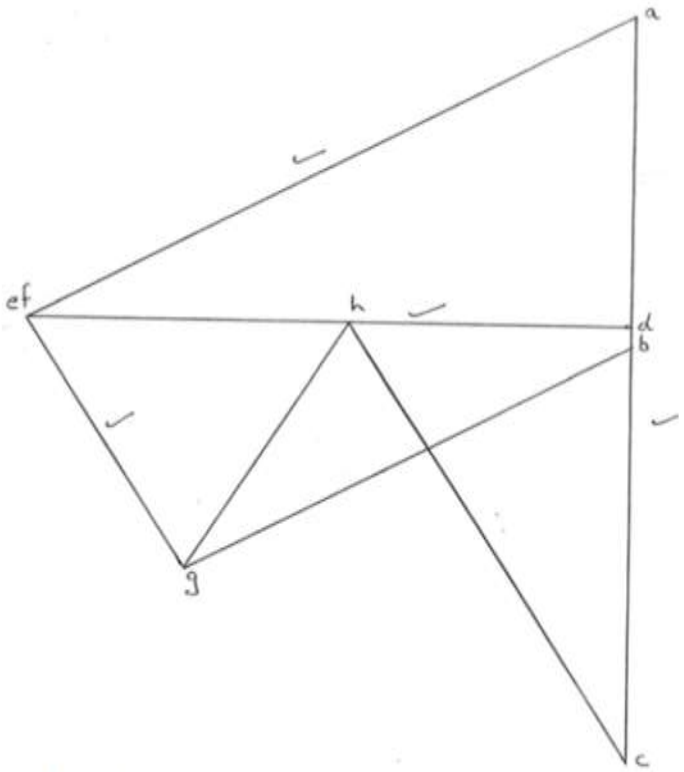


MEMBER	FORCE (N)	NATURE
AE	140 N ✓	STRUT ✓
EF	285 N ✓	STRUT ✓
FC	140 N ✓	STRUT ✓
BF	100 N ✓	TIE ✓
ED	100 N ✓	TIE ✓

NOTE: (Tolerance: ±2 mm) (2 mm = 10 N)

(19)

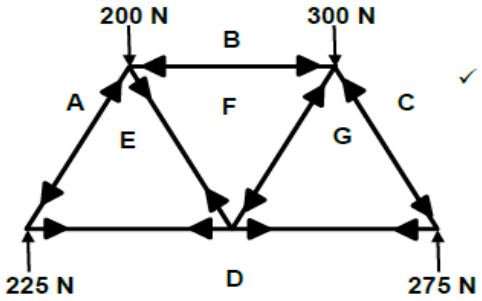
1.2 SOLUTION

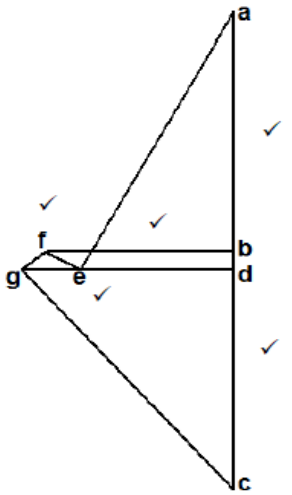


MEMBER	STRUT	TIE	FORCE	
AE	✓		15,3 N	✓
BG	✓		11,3 N	✓
CH	✓		12,2 N	✓
FG	✓		6,9 N	✓
EF				
DE		✓	13,25 N	✓
DF		✓	13,25 N	✓
DH		✓	6,2 N	✓
GH		✓	7 N	✓

1.3 **Forces in members:**

SCALE: Vector diagram 1 mm = 5 N





MEMBER	MAGNITUDE	NATURE
AE	260 N ✓	STRUT ✓
BF	135 N ✓	STRUT ✓
CG	317,5 N ✓	STRUT ✓
FG	27,5 N ✓	STRUT ✓
ED	130 N ✓	TIE ✓
EF	27,5 N ✓	TIE ✓
GD	160 N ✓	TIE ✓

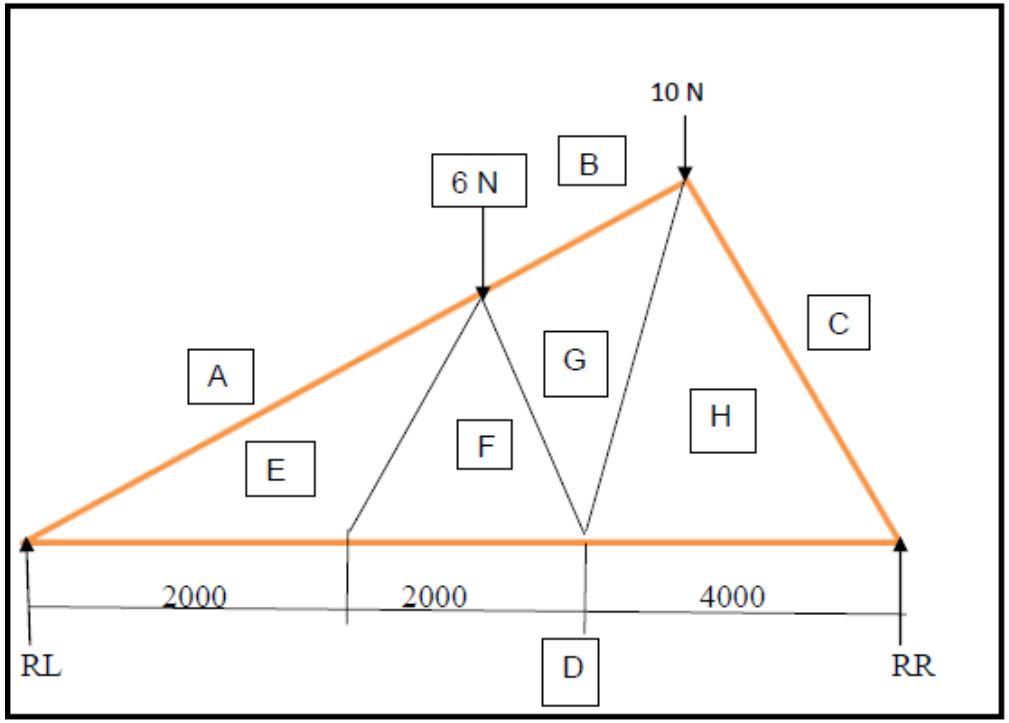
(20)

1.4

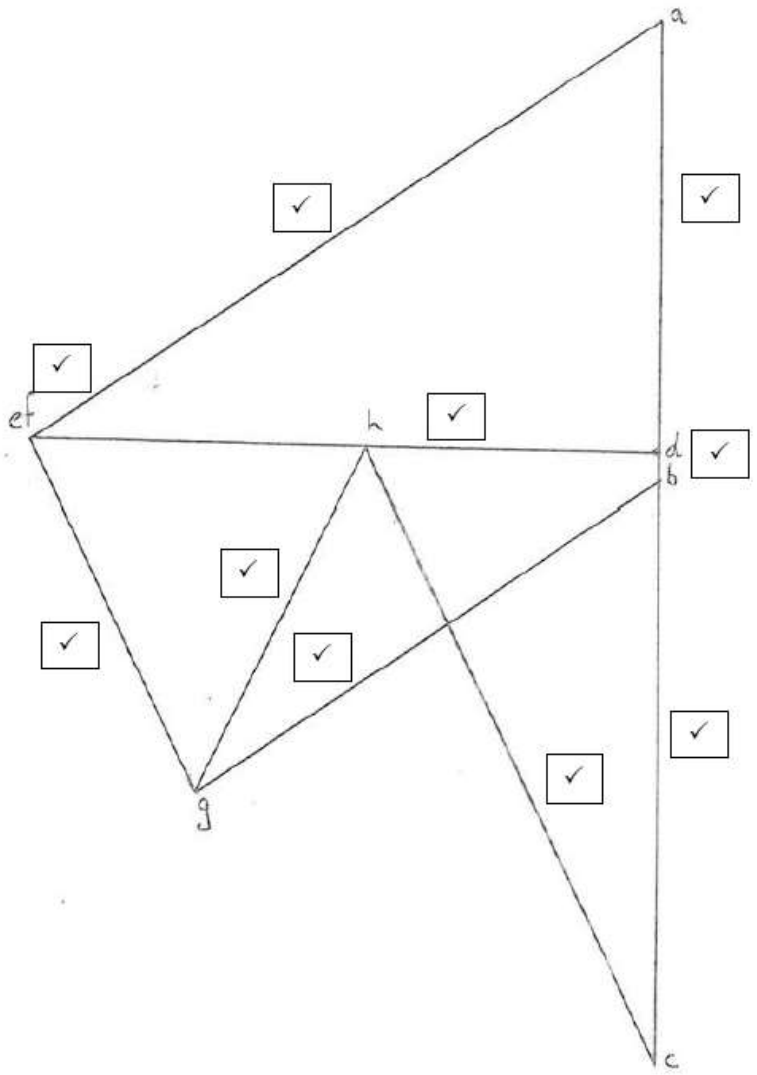
1.4.1

RR: RL X 8 = (10 x 2) + ((6 x 5) ✓
= 20 + 30
= 50 ✓
RL = 6,25 N✓

RL: RR X 8 = (6 x 3) + (10 x 6) ✓
= 18 + 60
= 78 ✓
RR = 9,75 N ✓



1.4.2



(10)