**S5 CORE MATHEMATICS COMPREHENSIVE ASSESSMENT 2020 MARKING SCHEME**

Answer 1 **a) 4marks**

a) Since the light is traveling from a rarer region (lower

n) to a denser region (higher n), it will bend toward the

normal.

**Answer b 6marks**

We will identify air as medium 1 and the fiber as

medium 2. Thus, n1=1.00 (index of air), n2 =1.44 and













Answer 2 5marks





So  diverges

answer 3

**.**F:student is female P(F)=0,55

M:student is male P(M)=1-0,55=0,45**/**

Full: student is fulltime P( Full)=0,65

a)P(Student is part-time)=1-0,65=0,35**/ 5marks**

b) Given that 35%are male,Full-time students P(M)= 0,35**/ 5marks**

Also P(Full)= P(M

=0,35+P(F

P(F

P(F)=P(F

0,55=0,30+P(F

P(Female and Part-time)=0,25

Answer 4 5marks





**answer 5**

Nth term of A, P is given by

13th term /

7th term a+6r =3(a+5)

27r=54

r=2 is common difference 5marks

a= 27-24 = 3 a=3 is the 1st term 5marks

S10= Sum of the first ten term, S10=

S10 =120 / 5marks

Answer 6) 10marks

/

3

x= 2

**Answer 7 5marks**

Centre of sphere is (2,1,−1) and its radius is *r* = 37 .

The distance between the centre of the sphere and the

given point is 



Here *d* . Thus, the point lies outside the sphere.

**Answer 8 10marks**

**( 10marks)**



=1x1



**answer 9**

1. **4marks**





**b)6marks**





**answer 10)**

a) Complete the table below **(15marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  | () |
| 3 | 2 | -4 | -2.6 | 10.4 |
| 5 | 3 | -2 | -1.6 | 3.2 |
| 6 | 4 | -1 | -o.6 | 0.6 |
| 8 | 6 | 1 | 1.4 | 1.4 |
| 9 | 5 | 2 | 0.4 | 0.8 |
| 11 | 8 | 4 | 3.4 | 13.6 |
|  |  |  |  |  |
|  |  |  |  |  |

b)The Covariance of  and  or **(5marks)**

