SUBJECT: SCIENCE

Contents:

Unit 6. Light (p.190-232)

- ✓ 6.1. Reflection
- ✓ 6.2. Refraction
- ✓ 6.3. Making rainbows
- ✓ 6.4. Galaxies
- ✓ 6.5. Rocks in Space

Instructions:

1) Students MUST complete the study guide before revision classes.

2) Students are ALLOWED to use calculators for problem-solving tasks.

PART 1. SCIENTIFIC TERMS

NO.	TERMS	UNITS	DEFINITIONS	VIETNAMESE TRANSLATIONS
1	**ray**	6.1		
2	**incident ray**	6.1		
3	**reflection**	6.1		
4	**law of reflection**	6.1		
5	**angle of reflection**	6.1		
6	**angle of incidence**	6.1		
7	**normal**	6.1		
8	**plane mirror**	6.1		
9	**medium**	6.2		
10	**refraction**	6.2		
11	**angle of refraction**	6.2		
12	**bent**	6.2		
13	**distort**	6.2		
14	**dispersion**	6.3		
15	**prism**	6.3		

16	**spectrum**	6.3		
17	**absorb**	6.4		
18	**coloured filter**	6.4		
19	**non-luminous**	6.4		
20	**primary colours**	6.4		
21	**subtraction**	6.4		
22	**transmit**	6.4		
23	**elliptical**	6.5		
24	**galaxy**	6.5		
25	**irregular**	6.5		
26	**spiral**	6.5		
27	**stellar dust**	6.5		
28	**Universe**	6.5		
29	**asteroid**	6.6		
30	**asteroid belt**	6.6		
31	**crater**	6.6		
32	**impact**	6.6		

PART 2. EXERCISES

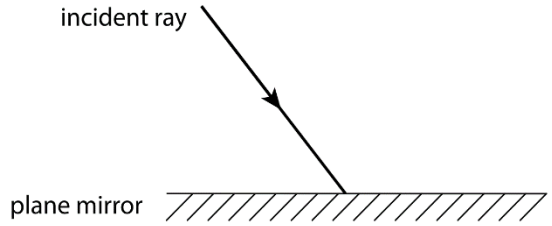
Exercise 1. Draw ray diagrams for reflection and refraction.

For each diagram, label

- the normal
- the angle of incidence (i)
- the angle of reflection (r)
- the reflected ray/ the refracted ray.

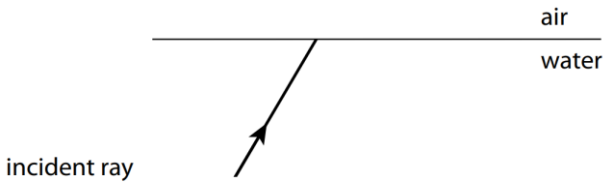
Note: For the refraction diagrams, you **DO NOT** need to measure the angles.

1.



2.

3.



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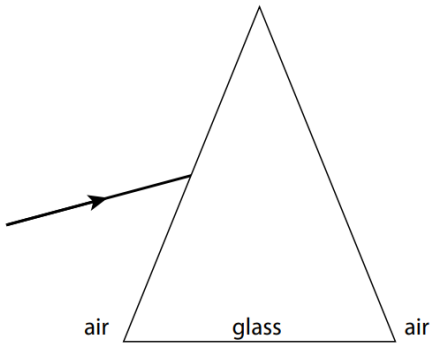

Exercise 2. Solve the following problems and show your calculation steps clearly. Give your answers correct to one decimal place.

Formulae:
If an object moves at a constant speed (v) for a duration of time (t), the distance (d) it travels is calculated using the formula d = v.t

1. The diameter of the asteroid Vesta is $\frac{1}{10}$ of the diameter of the planet Mercury. Mercury has a diameter of 5,000km. Calculate the diameter of Vesta.

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2. Jupiter is three times the size of its moon, Ganymede. Jupiter has a diameter of 139,822 km. Calculate the diameter of Ganymede.

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3. The average distance between Earth and Mars is about 225 million kilometres. How many minutes would it take for you to travel from Earth to Mars at the speed of light (300,000 km/s)?

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