

**Q1.** Rapeseed oil can be used for cooking.

A label on a bottle of rapeseed oil stated:

Rapeseed oil is healthy because it is

- low in saturated fat
- high in poly-unsaturated fat.

Two students investigated if the statement was true. They found the following information about four oils.

	Rapeseed oil	Sunflower oil	Olive oil	Corn oil
Saturated fat (%)	6.6	12.0	14.3	14.4
Mono-unsaturated fat (%)	59.3	20.5	73.0	29.9
Poly-unsaturated fat (%)	29.3	63.3	8.2	51.3
Melting point (°C)	5	-18	-12	-15

(a) Does this information support the two claims made on the label?  
Explain your answers.

(i) 'Rapeseed oil is low in saturated fat.'

.....  
.....  
.....

(1)

(ii) 'Rapeseed oil is high in poly-unsaturated fat.'

.....  
.....  
.....

(1)

- (b) Rapeseed oil contains unsaturated fats.

How could the students test the oil to show that it contained unsaturated fats?

Test .....

.....

Result of test .....

.....

(2)

- (c) Rapeseed oil can be hardened by reacting it with hydrogen.

- (i) What would happen to the melting point of rapeseed oil if it was hardened?

.....

.....

(1)

- (ii) One student claimed that hardening would make the rapeseed oil healthier.

Explain why the student is wrong.

.....

.....

.....

.....

.....

(2)

(Total 7 marks)

**Q2.** Scientists state that unsaturated fats are healthier to eat than saturated fats.

The table shows some information about four fats.

Fat	Fat content as a percentage (%)		Melting point in °C
	Unsaturated	Saturated	
<b>A</b>	80	20	−11
<b>B</b>	60	40	−5
<b>C</b>	30	70	+4
<b>D</b>	10	90	+63

(a) (i) Which fat, **A**, **B**, **C** or **D**, has the lowest melting point?

(1)

(ii) Use the information in the table to describe the pattern between the percentage of unsaturated fat and the melting point.

.....  
 .....

(1)

(iii) Which fat, **A**, **B**, **C** or **D**, contains the smallest number of carbon carbon double bonds

per gram?

(1)

(b) Fat **A** is reacted with hydrogen (hydrogenated).

State **one** way in which the physical properties of Fat **A** are changed by this reaction.

.....  
 .....

(1)

(c) Tick (✓) **one** thing that scientists are **not** able to do.

One thing that scientists are not able to do	Tick (✓)
find out if a fat is unsaturated	
show that an unsaturated fat is healthier to eat than a saturated fat	
stop people eating unhealthy fat	
change unsaturated fat to saturated fat	

(1)  
(Total 5 marks)

