JCOL Basic Skills – Pack 5

Topics

Algebra – Can I factorise algebraic expressions?

1 ▶ 2011 JCOL Paper 1 – Question 5 (b) ☐

Applied Arithmetic (Financial) – Can I calculate income tax?

2 ▶ 2018 JCOL Paper 1 – Question 6 (a) ☐

Coordinate Geometry – Can I calculate the slope of a line, given two points on the line?

3 ▶ 2019 JCOL Paper 2 – Question 10 (d) ☐

Trigonometry – Can I use trigonometric ratios to find missing sides of triangles?

4 ▶ 2017 JCOL Paper 2 – Question 5 (a) (i) ☐

Area, Perimeter and Volume – Can I find the volume of cuboids?

5 ▶ 2017 JCOL Paper 2 – Question 3 (a) ☐

www.mathspoints.ie for **worked solutions** to these questions.

JCOL Resources by Topic

JCOL Revision – 50 Common Questions

1 ▶ 2011* JCOL Paper 1 – Question 5 (b)

Factorise each of the following.

(i) $4xy - 8y$

(ii) $xy - xz + 3y - 3z$

(iii) $x^2 + 7x + 12$

(iv) $x^2 - 64$

2 ▶ 2018 JCOL Paper 1 – Question 6 (a)

Oisín earns €30 000 per year. He pays tax at 20%.

(i) Work out Oisín's **gross tax** per year.

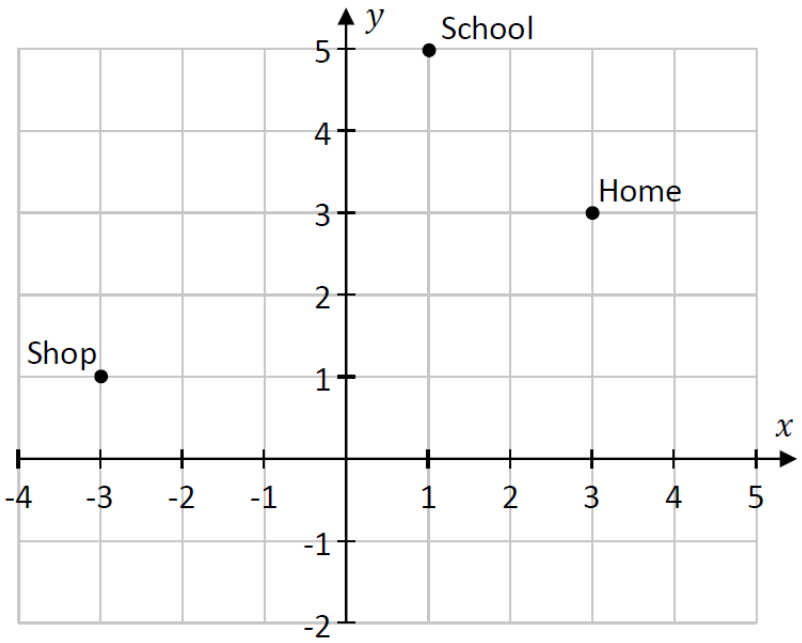
Oisín's tax credits are €3300 per year.

(ii) Work out his **net pay** per year.

3 ▶ 2019 JCOL Paper 2 – Question 10 (d)

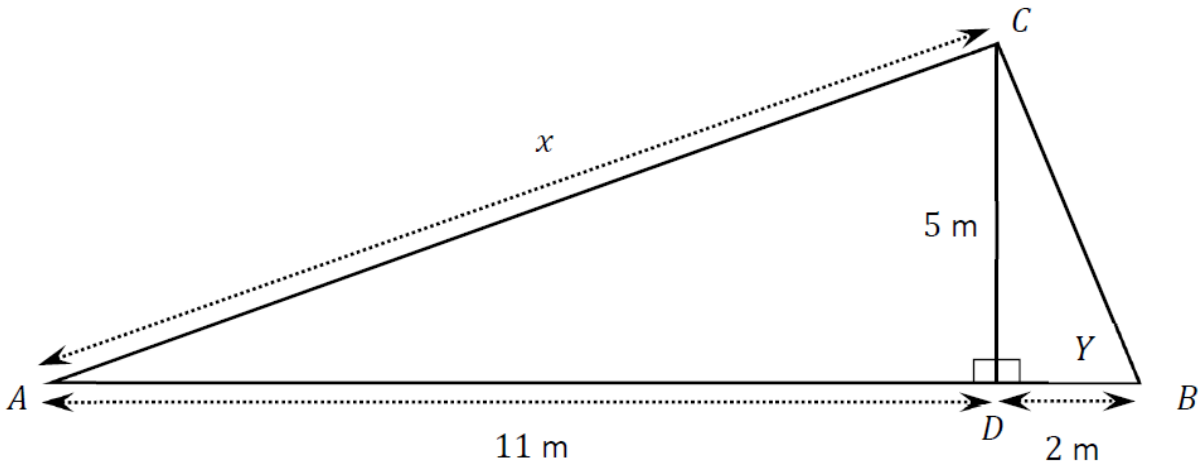
The co-ordinate diagram below shows part of the town where Ben lives.

Show that the **slope** of the line from the Shop to Home is $\frac{1}{3}$.



4 ▶ 2020 JCOL Sample Paper – Question 12 (d)

Y is one of the angles in the triangle DBC.



(i) Write down the length of the side opposite Y and the side adjacent to Y **in DBC**.

Opposite Y = ☐ Adjacent to Y = ☐

(ii) Use your answer from part **(c)(i)** to write tan Y as a fraction.

$$\tan Y = \frac{\square}{\square}$$

(iii) Hence, use a calculator to find the size of the angle Y, correct to the nearest degree.

5 ▶ 2019 JCOL Paper 2 – Question 2 (c)

A closed rectangular box has a square base with sides of length 3 cm, and a height of 5 cm.

Find the **volume** of the box.