Trigonometry with obtuse angles

Grade 7 | Higher | 10 questions, 30 marks

GCSE Maths topic practice

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Name: _____ **Date:** _____ **Score:** _____ **/ 30**

1 $\sin 35° = \sin x°$, where x is an obtuse angle.

Write down the value of x.

(1 mark)

Answer _____

2 Correct to 3 decimal places, $\sin 40° = 0.643$, $\cos 40° = 0.766$ and $\tan 40° = 0.839$

Write down the value of

a. $\sin 140°$

b. $\cos 140°$

c. $\tan 140°$

(3 marks)

Answer _____

3 $\sin x° = 0.4$ and $0 \leq x \leq 180$

Find both possible values of x. Give your answers correct to 1 decimal place.

a. the acute value of x

b. the obtuse value of x

(2 marks)

Answer _____

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4 In each part, $0 \leq x \leq 180$

a. $\cos x° = -0.5$

Find the value of x.

b. $\tan x° = -2.5$

Find the value of x. Give your answer correct to 1 decimal place.

(3 marks)

Answer _____

5 The angle x is obtuse and $\sin x = \frac{5}{13}$

Find the exact value of

a. $\cos x$

b. $\tan x$

(3 marks)

Answer _____

6 In triangle ABC, AB = 9 cm, AC = 6.5 cm and angle BAC = 130°.

Work out the area of triangle ABC. Give your answer correct to 1 decimal place.

(2 marks)

Answer _____

7 In triangle PQR, PQ = 5 cm, QR = 7 cm and PR = 10.5 cm.

Work out the size of angle PQR. Give your answer correct to 1 decimal place.

(3 marks)

Answer _____

8 In triangle ABC, AB = 8 cm, BC = 5 cm and angle BAC = 32°.

Angle ACB is obtuse.

Work out the size of angle ACB. Give your answer correct to 1 decimal place.

(3 marks)

Answer _____

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9 In triangle DEF, DE = 11 cm, EF = 7 cm and angle EDF = 25°.

Angle DFE is obtuse.

a. Work out the size of angle DFE. Give your answer correct to 1 decimal place.

b. Work out the length of DF. Give your answer correct to 1 decimal place.

(5 marks)

Answer _____

10 A triangular field ABC has AB = 120 m and AC = 85 m.

Angle ABC = 38° and angle ACB is obtuse.

Work out the area of the field. Give your answer in m^2 correct to 3 significant figures.

(5 marks)

Answer _____

End of questions | Total 30 marks

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