Mathsbase Exam Questions: Circle Theorems

1) Prove that angles in a triangle add up to 180 degrees. (4 marks)

Answer: _____

2) Given that angle A = 60 degrees and angle B = 75 degrees, find the measure of angle C in triangle ABC. (2 marks)

Answer: _____

3) In triangle XYZ, angle XZY = 90 degrees and angle ZYX = 45 degrees. Prove that angle YXZ is a right angle. (3 marks)

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Answer: _____

4) Triangle DEF is an isosceles triangle with DE = DF. If angle D = 70 degrees, find the measure of angles E and F. (3 marks)

Answer: _____

5) In triangle ABC, angle A is twice as large as angle B, and angle C is 30 degrees. Find the measure of all three angles. (4 marks)

Mark Scheme:

1) Correctly stating that the sum of angles in a triangle is 180 degrees (1 mark) and providing a clear explanation or proof (3 marks)

2) Subtracting the given angles from 180 degrees and correctly determining the measure of angle C (2 marks)

3) Recognizing that angle XZY is a right angle (1 mark) and providing a valid reason or proof (2 marks)

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4) Justifying that DE = DF implies that angle E = angle F (1 mark) and calculating the measure of angles E and F correctly (2 marks)

5) Setting up the equation A + B + C = 180 degrees correctly (1 mark), expressing angle A as twice angle B correctly (1 mark), solving the equation for all three angles accurately (2 marks)

Answer: _____