edexcel

GCSE Mathematics B (2MB01) : Feedback on June 2012 Unit 2 Examination

(5MB2F, 5MB2H)

Presenter: Kevin Tanner

Unit 2 Introduction

edexcel

- Two tiers of entry available: Foundation and Higher
- 30% weighting
- Non-calculator paper
- Total of 60 marks

- Content areas: Number, Algebra, Geometry and Measures
- Some overlap in content with Unit 1
- Testing all assessment objectives.

Overall Candidate Information: Grade Boundaries

Unit 2F: 31934 candidates

Unit 2F	C	D	E	F	G
Raw mark	44	36	29	22	15
% mark	73.3	60	48.3	36.7	25
Cum % success	6.5	24.9	50.8	75.6	91.1

Overall Candidate Information: Grade Boundaries

edexcel

Unit 2H: 50863 candidates

Unit 2H	A*	A	B	C	D	E
Raw mark	54	49	39	29	19	14
% mark	90	81.7	65	48.3	31.7	23.3
Cum % success	7.6	17.7	44.2	71.5	89.5	95.1

What candidates did well at

edexcel

Foundation Paper 2F

In general, candidates did well when;

(a) questions were in a familiar format:

(Q1a) Read a scale ….. 89.9% correct

(Q1b) Write down the number in figures ….. 67.9% correct

(Q2ci) Write down the number of faces ….. 73.5% correct

(Q3) Simplify ….. Over 56% got all three parts correct

(Q5b) Measure the length/size of ….. 88.1% measured the line accurately, 60.1% measured the angle accurately

(Q6a) Write down the next number in the sequence ….. 96% correct

(Q7) What is 10% of ….. 75% correct

What candidates did well at

Foundation Paper 2F

In general, candidates did well when;

(b) questions involved a familiar context:

(Q4) Working out a shopping bill ….. 77.6% got 3 or 4 marks out of 4

(Q9) Working out times ….. 70.2% got 2 or 3 marks out of 3

(Q10) Costing the edging strip of a lawn ….. 65.7% got at least 2 marks out of 4

(Q12) Working out a "better buy" ….. 67.2% got 2 or 3 marks out of 3

What candidates did well at

edexcel

Higher Paper 2H

In general, candidates did well when;

(a) questions were in a familiar format:

(Q2) Find the *n*th term of a sequence ….. 81.4% fully correct

(Q3) Divide by a ratio ….. 91% correct

(Q4) Add two simple fractions ….. 71.2% correct

(Q6ab) Factorise/Expand and simplify ….. 76.5% got 2 or 3 marks out of 4

(Q9) Draw a straight line graph ….. 70.5% fully correct

(Q12a) Expand and simplify (product of 2 brackets) ….. 62.2% correct

What candidates did well at

edexcel

Higher Paper 2H

In general, candidates did well when;

(b) questions were in context involving numerical calculations:

(Q5) Percentage decrease….. 84.2% fully correct

(Q7) Electricity bill (long multiplication) ….. 78.4% got 3 or 4 marks out of 4

(Q10) Working out the area of a trapezium ….. 73.9% got 3 or 4 marks out of 4

What candidates did less well at

edexcel

Foundation Paper 2F

In general, performance was poor in the following questions

Q1c Write down the value of 7 in 43.765

700, 7 hundredths and 0.7 were the best of the incorrect responses

Understanding of **place value** is poor

3.4% only got this right

What candidates did less well at

Foundation Paper 2F

In general, performance was poor in the following questions

Q2, Q5a Questions involving mathematical language

Trapezium Chord Vertices Perpendicular

9% only named the chord

8% identified a pair of mutually perpendicular lines

What candidates did less well at

edexcel

Foundation Paper 2F

In general, performance was poor in the following questions

Q8b Shade two more squares so that the completed shape has rotational symmetry of order 2

93.1% were able to correctly answer part (a); line symmetry

But in part (b), many failed to **read the question**, assuming line symmetry in this part also

6.4% only got this right

What candidates did less well at

edexcel

Foundation Paper 2F

In general, performance was poor in the following questions

Q11 Work out the size of the angle marked *x*°.
Give reasons for your answer

20.8% were able to find the size of the required angle

but

Only 0.9% (287 out of over 31000 candidates) gave correct reasons

What candidates did less well at

Foundation Paper 2F

In general, performance was poor in the following questions

Q13 Work out **(a)** $\frac{2}{5} \times \frac{3}{8}$ **(b)** $\frac{3}{8} + \frac{1}{4}$

Only 12% managed to correctly answer both parts

Basic arithmetic of fractions continues to be a problem

37.8% got no marks at all

What candidates did less well at

edexcel

Foundation Paper 2F

In general, performance was poor in the following questions

Questions 14 to 17 were common with paper 2H and one would expect candidates at the Foundation level to find these a challenge.

What candidates did less well at

edexcel

Higher Paper 2H

In general, performance was poor in the following questions

Q1 **Work out the size of the angle marked *x*.**
You must give reasons for each stage of your working

61.1% were able to find the size of the required angle

but

Only 18.6% gave the correct reasons

What candidates did less well at

edexcel

Higher Paper 2H

In general, performance was poor in the following questions

Q8 Work out the total surface area of the prism

Only 38.5% gave the correct area

Many found the volume of the prism; not **reading the question** carefully

The major failing was in finding the **area of a triangle**

What candidates did less well at

edexcel

Higher Paper 2H

In general, performance was poor in the following questions

Q11 Danny bought a car for £10 000
The value depreciated by 20% in the first year and by 10% in the second year.
Work out the value of Danny's car at the end of two years.

Although 54.6% got the correct answer,

14.8% got NO marks and 29% simply found 70% of £10 000

A significant conceptual error

What candidates did less well at

Higher Paper 2H

In general, performance was poor in the following questions

Q14a Write the recurring decimal $0.2\dot{5}$ as a fraction in its simplest form

48.3% did not understand this notation

Only 20.7% gained full marks

What candidates did less well at

edexcel

Higher Paper 2H

In general, performance was poor in the following questions

Q15 Work out the size of the angle *TOR*.
You must give reasons for each stage of your working

56.4% were able to find the size of the required angle

but

Only 15.4% gave the correct reasons

What candidates did less well at

edexcel

Higher Paper 2H

In general, performance was poor in the following questions

Q17 Find an equation of the straight line that is perpendicular to the straight line $x + 2y = 5$ and passes through the point (3, 7)

Only 6.3% found a correct equation

Many incorrectly/or never rearranged the given equation in the form $y = mx + c$

82.3% gained NO marks

Common Issues

- Arithmetical errors
- Algebraic manipulation
- Area of a triangle
- Geometric reasoning and QWC

Common Issues

Arithmetical errors

Paper 2F

Q4 subtracting £10.35 from £20

Q10 multiplying £1.50 by 36 (18)

Q11 subtracting from 360 or 180

Q15 multiplication of 35p by 515

Paper 2H

Q7 multiplication of 35p by 515

Q16 finding ¾ of 80 or 50

Common Issues

Algebraic manipulation

Paper 2F

Q3a $p + p + p + p + p = p^5$

Q3b $3b - b = 3$ and sometimes $-2b$

Q14a $5(x+7) = 5x + 7$ or $3(x - 2) = 3x - 2$

Paper 2H

Q6c $3a^2b + 6ab^2 = 3ab(a + 2ab)$

Q12b $x^2 - 16 = (x - 8)(x + 8)$ or $(x - 4)(x - 4)$

Common Issues

Area of a triangle

Paper 2F, Q17 and Paper 2H, Q8
Q17 Area of cross section = 12 x 5 = 60 !!!!!

Paper 2H
Q10 The most common incorrect solution:

6 x 3 = 18
3 x 2 = 6
18 – 6 = 12

Answer = 12 cm^2

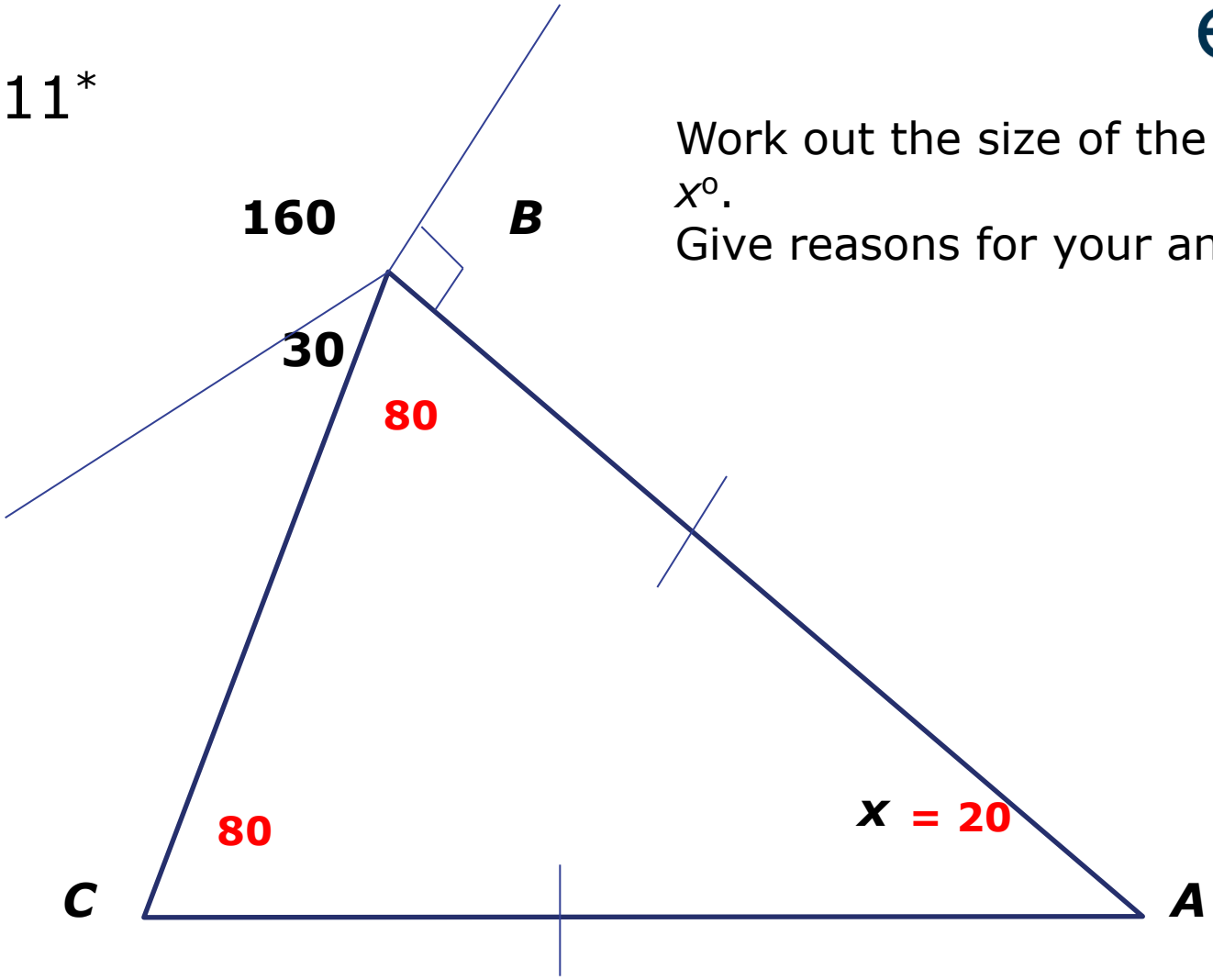
2 marks only

Common Issues

Geometric reasoning and QWC

Paper 2F
Q11

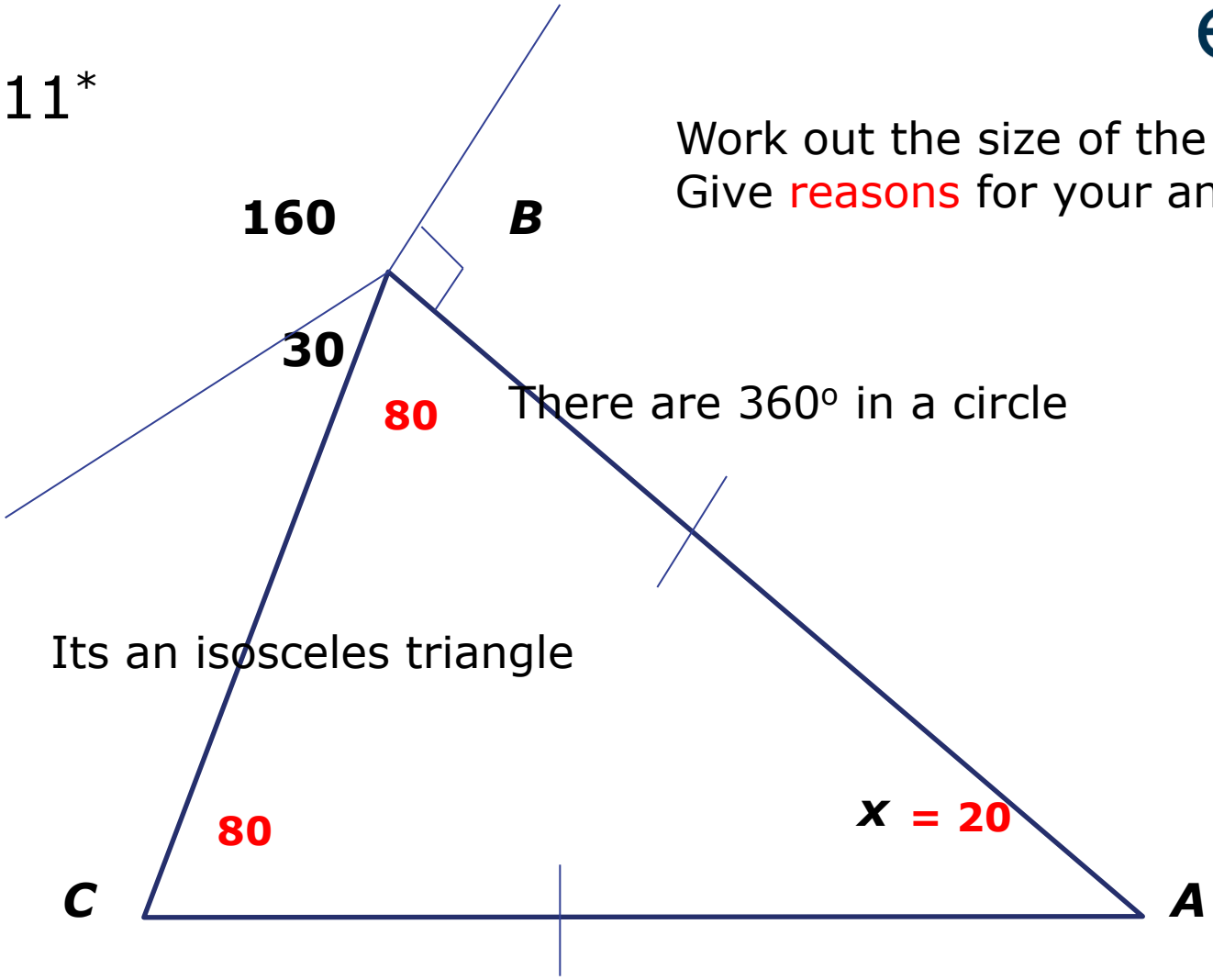
Q11*



Work out the size of the angle marked x^{o}.
Give reasons for your answer.

Q11*

Work out the size of the angle marked x^o.
Give reasons for your answer.

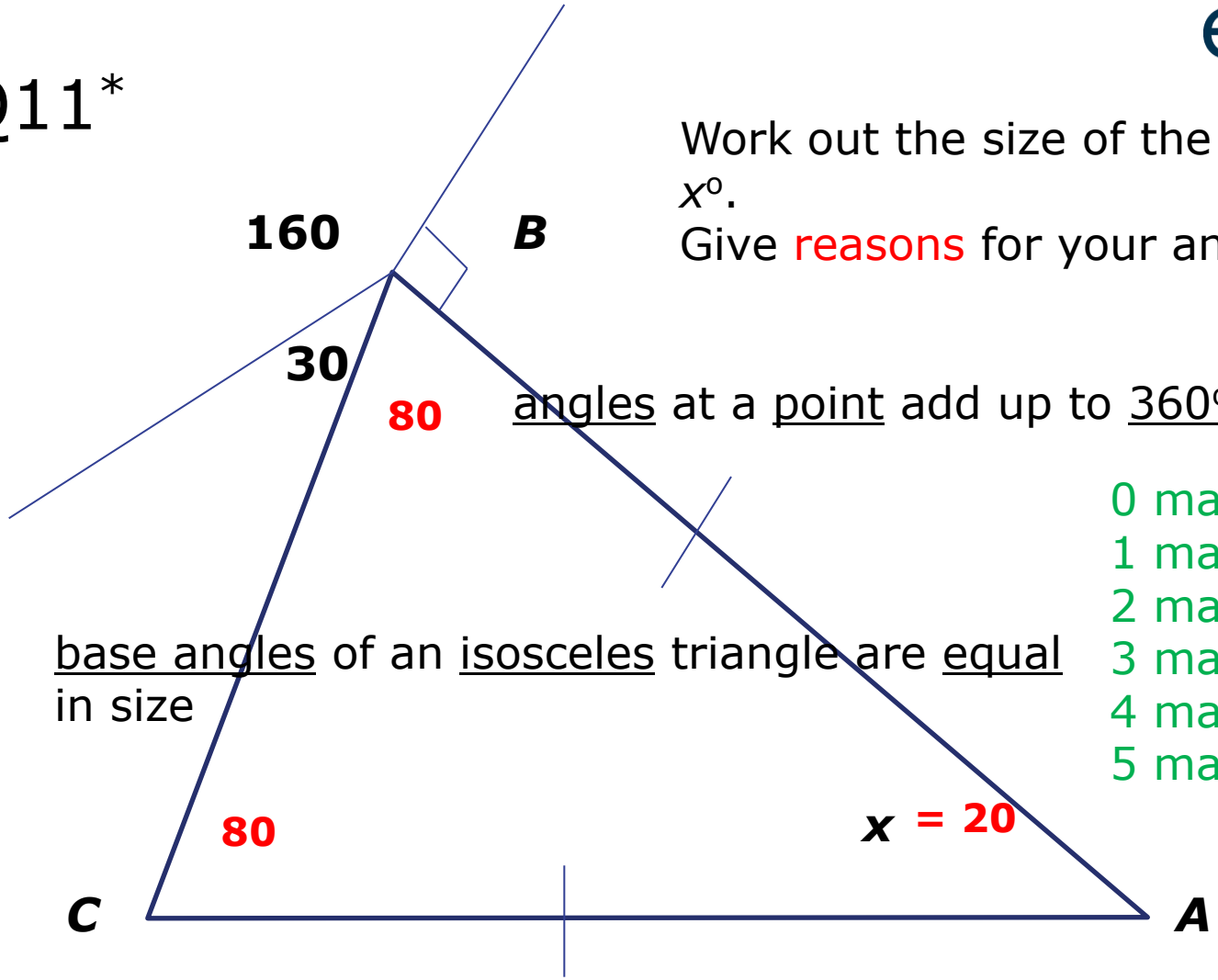


There are 360° in a circle

Its an isosceles triangle

a triangle is 180°

Q11*



Work out the size of the angle marked x^o.
Give reasons for your answer.

angles at a point add up to 360°

base angles of an isosceles triangle are equal in size

angles in a triangle add up to 180°

0 marks = 61.5%
1 mark = 16.6%
2 marks = 1.1%
3 marks = 16.4%
4 marks = 3.5%
5 marks = 0.9%

Common Issues

Geometric reasoning and QWC

Paper 2H
Q1

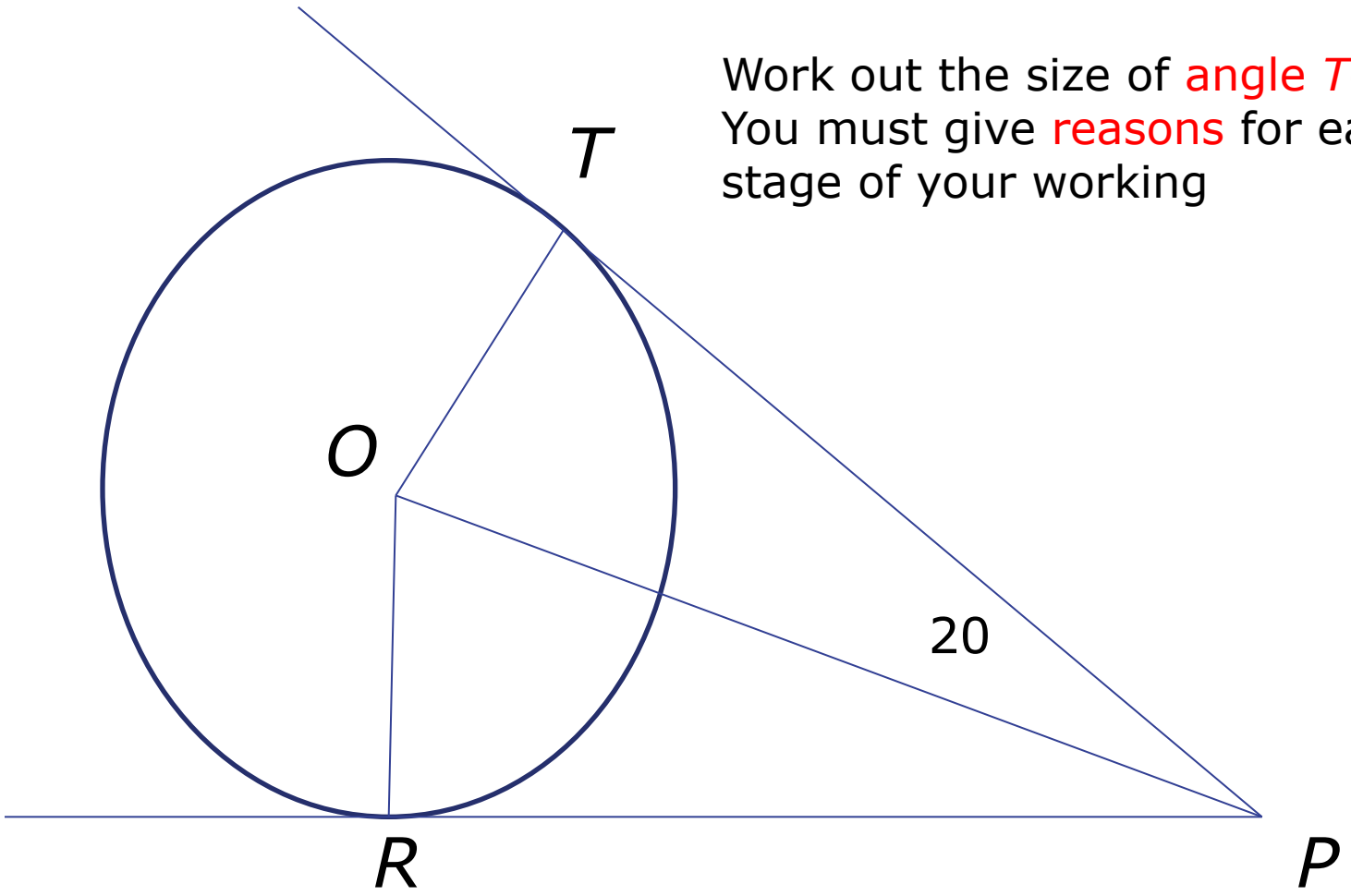
0 marks = 22.8%
1 mark = 9.9%
2 marks = 6.3%
3 marks = 42.5%
4 marks = 18.8%

Common Issues

Geometric reasoning and QWC

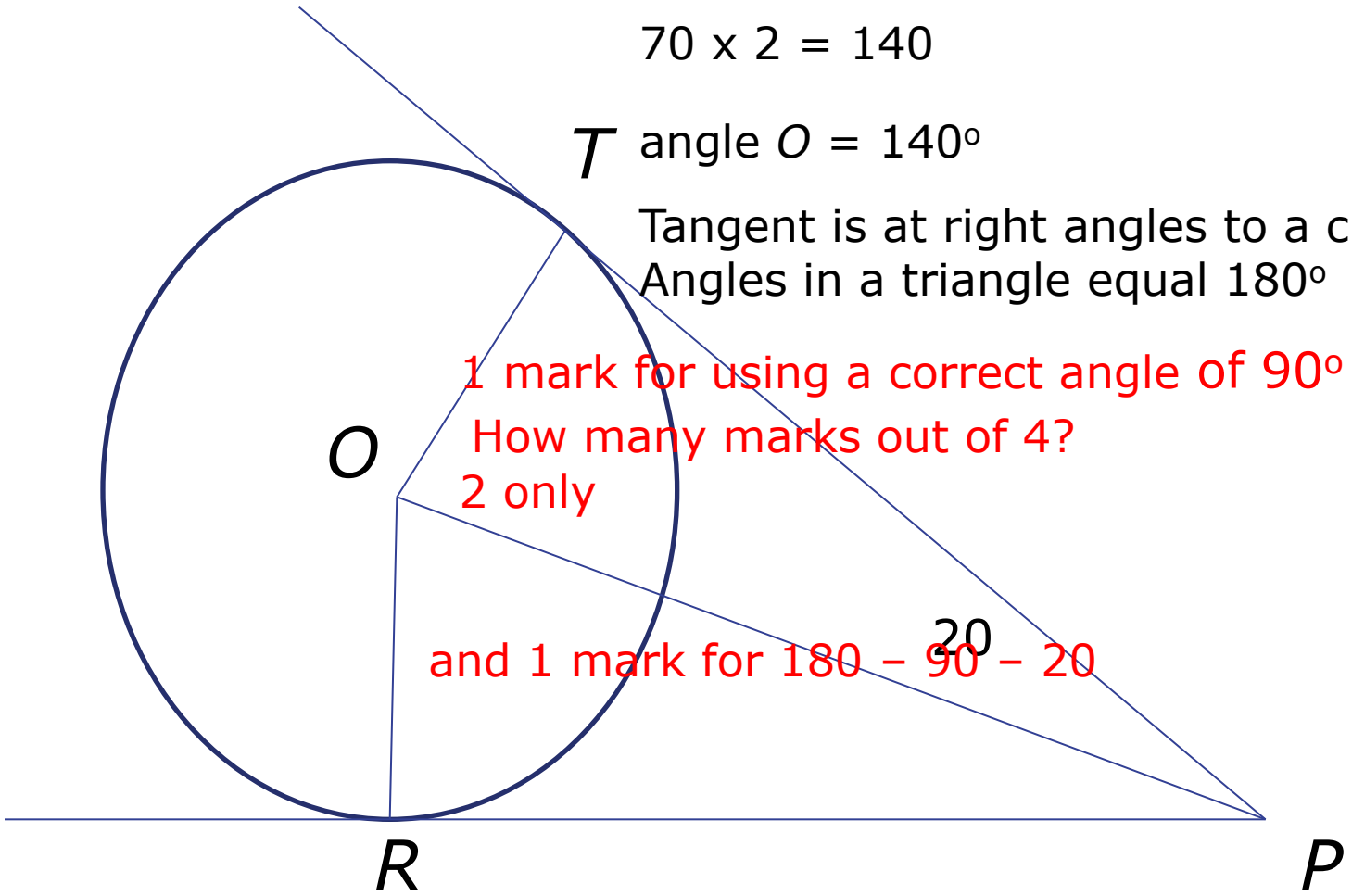
Paper 2H
Q15

0 marks = 19.6%
1 mark = 9.2%
2 marks = 14.8%
3 marks = 41%
4 marks = 15.4%



Work out the size of angle *TOR*
You must give reasons for each stage of your working

Solution



180 – 90 – 20 = 70

70 x 2 = 140

angle O = 140°

Tangent is at right angles to a circle
Angles in a triangle equal 180°

1 mark for using a correct angle of 90°

How many marks out of 4?

2 only

and 1 mark for 180 – 90 – 20

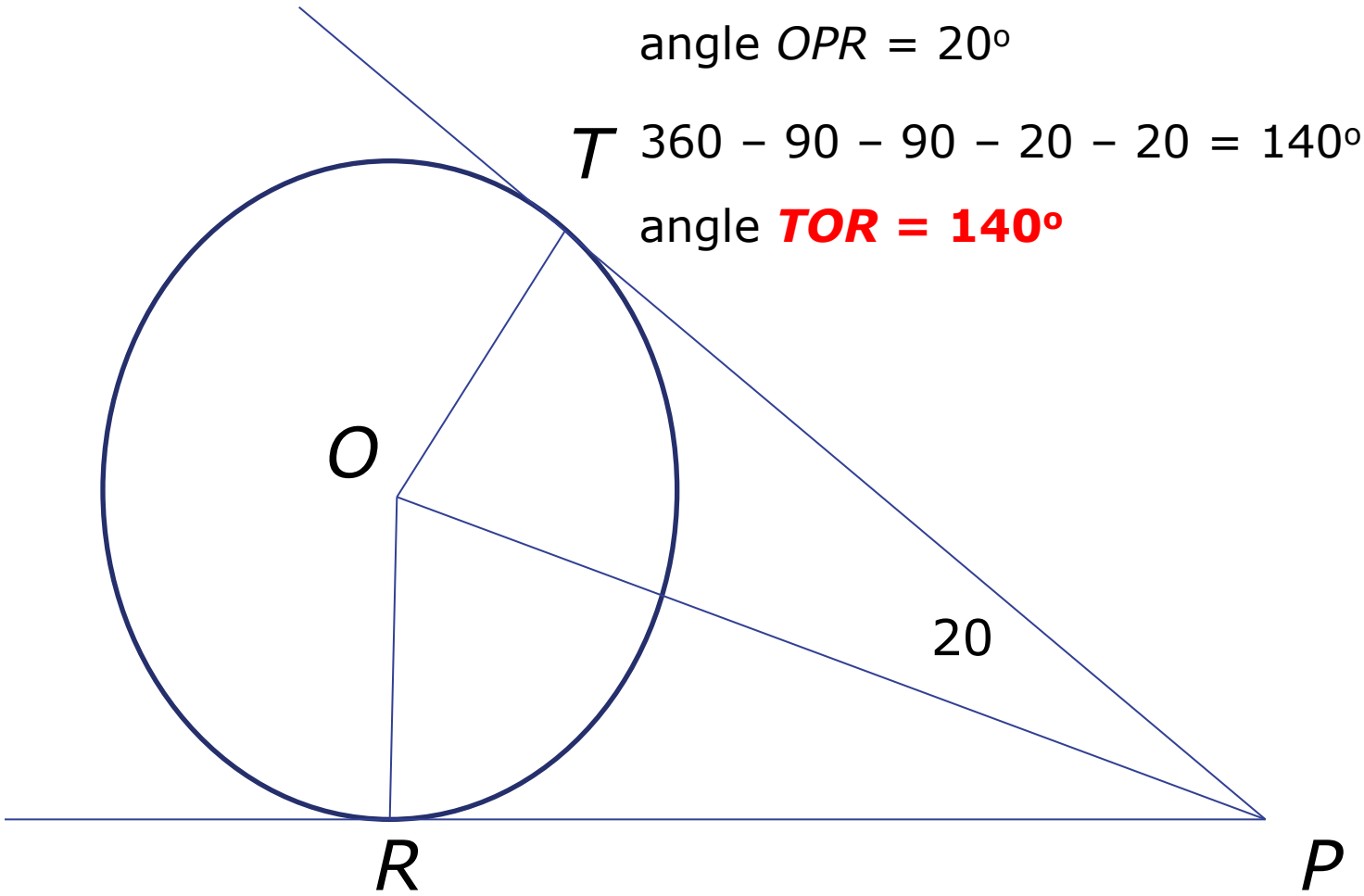
Solution

angle OTP = angle ORP = 90°

angle OPR = 20°

$360 - 90 - 90 - 20 - 20 = 140^o$

angle ***TOR* = 140°**

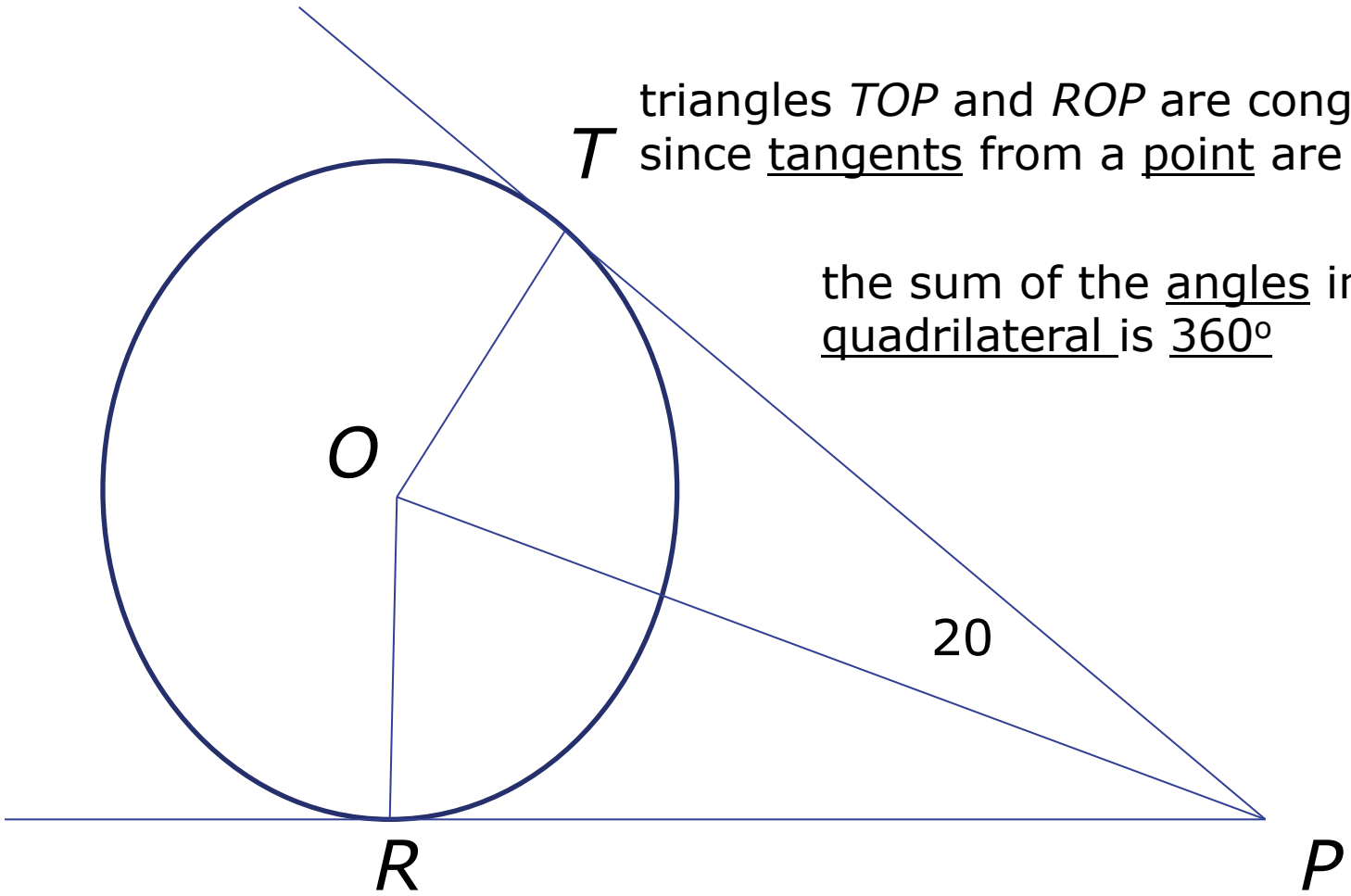


Reasons:

angle between tangent and radius is 90°

triangles *TOP* and *ROP* are congruent since tangents from a point are equal

the sum of the angles in a quadrilateral is 360°



Common Issues

In conclusion, we need to provide opportunities for students to gain more practice in improving:

- Arithmetical competence without a calculator
- Algebraic manipulation
- Finding the area of a triangle
- Geometric reasoning and QWC

Any questions?

Please submit your questions through our Ask the Expert service.

http://edexcel--5571.custhelp.com/app/home

edexcel

Thank you for taking part in this training

Please complete our online evaluation form.

THANK YOU!