**Year 12 Pure Maths Homework Booklet**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Maths Teachers:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Contents**

**Page 2:** Algebraic Expressions

**Page 5:** Quadratics

**Page 10:** Equations and Inequalities

**Page 15:** Graphs and Transformations

**Page 20:** Straight Line Graphs

**Page 26:** Circles

**Page 30:** Algebraic Methods

**Page 34:** The Binomial Expansion

**Page 37:** Trigonometric Ratios

**Page 41:** Trigonometric Identities and Equations

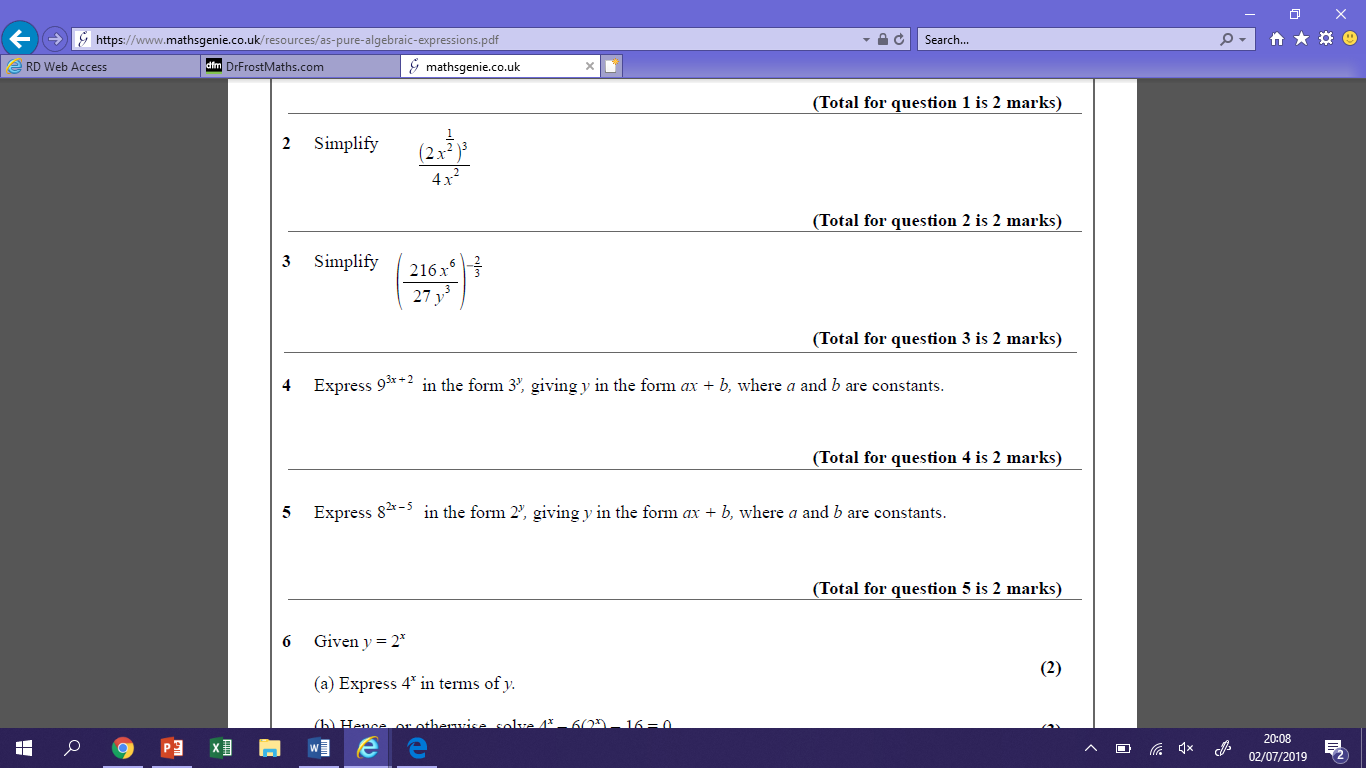
**Page 45:** Vectors

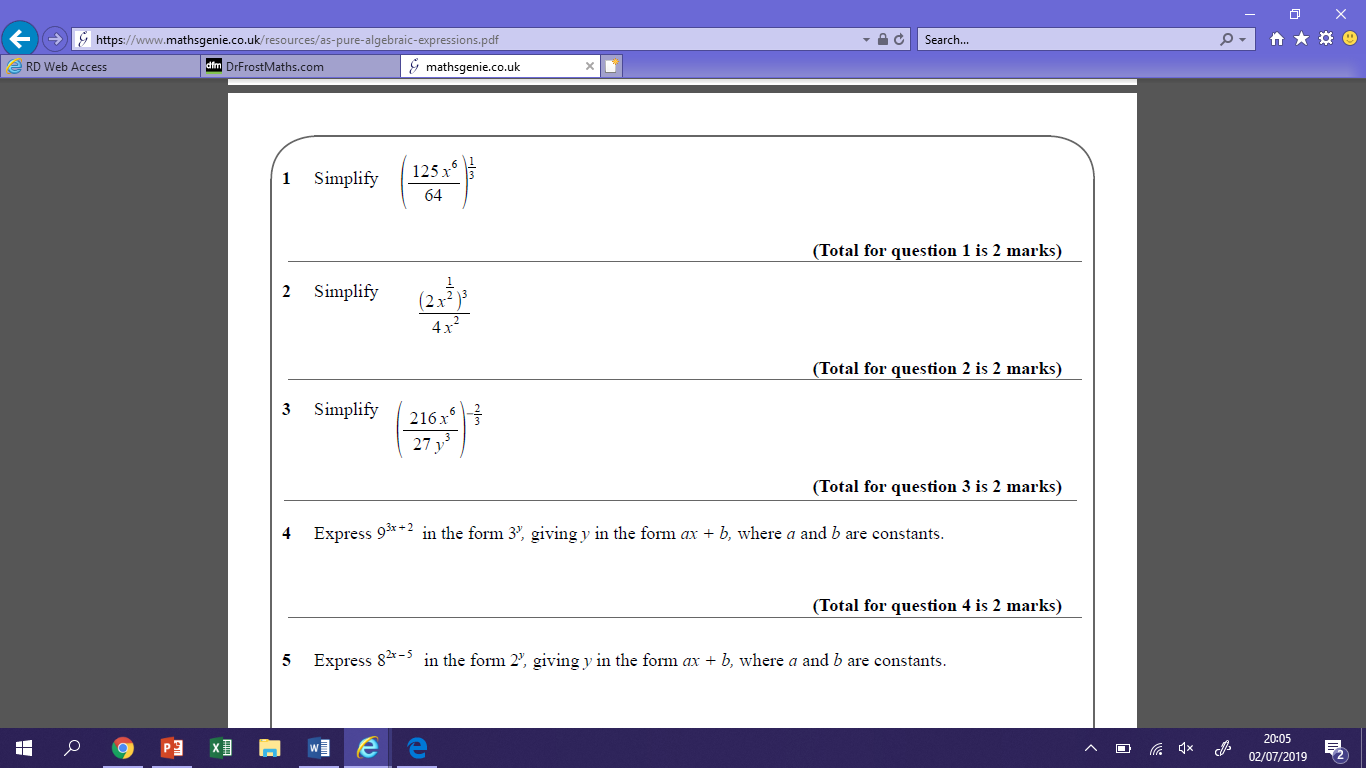
**Page 48:** Differentiation

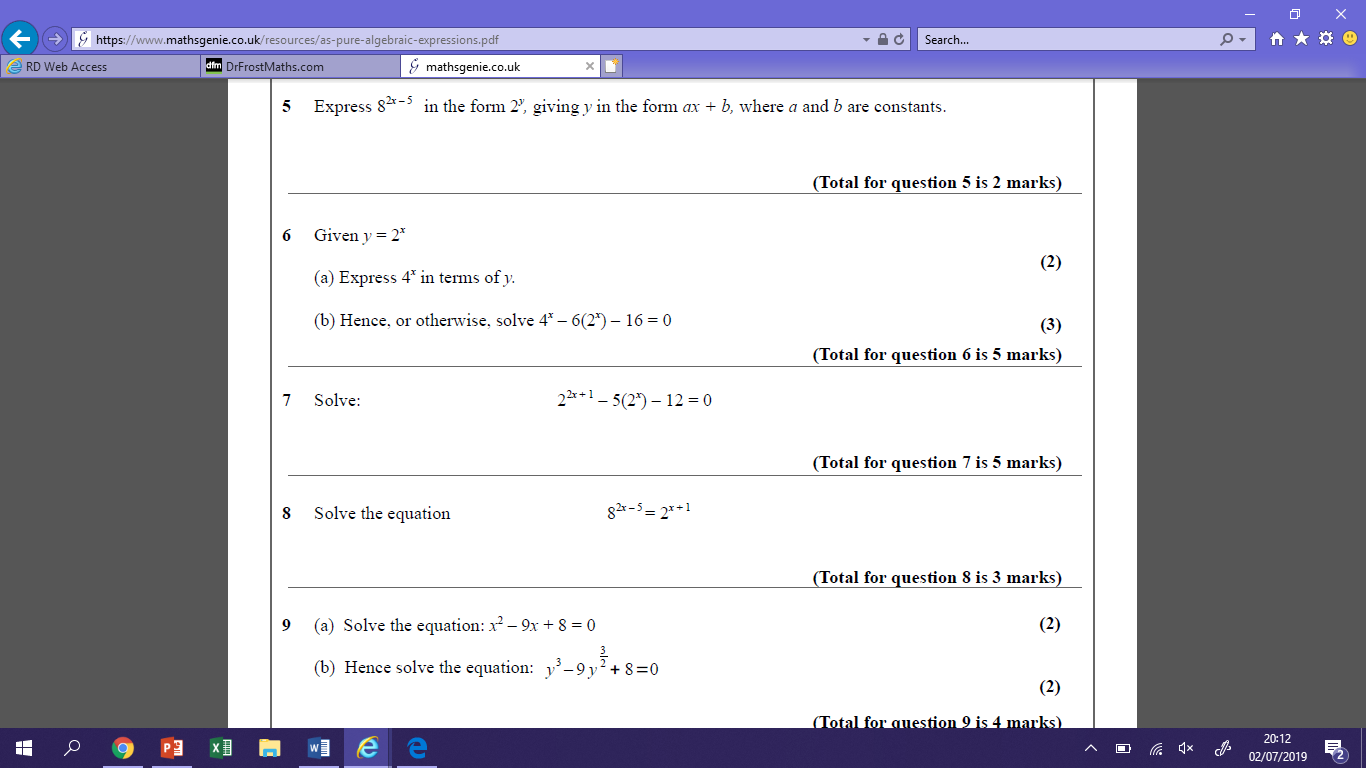
**Page 54:** Integration

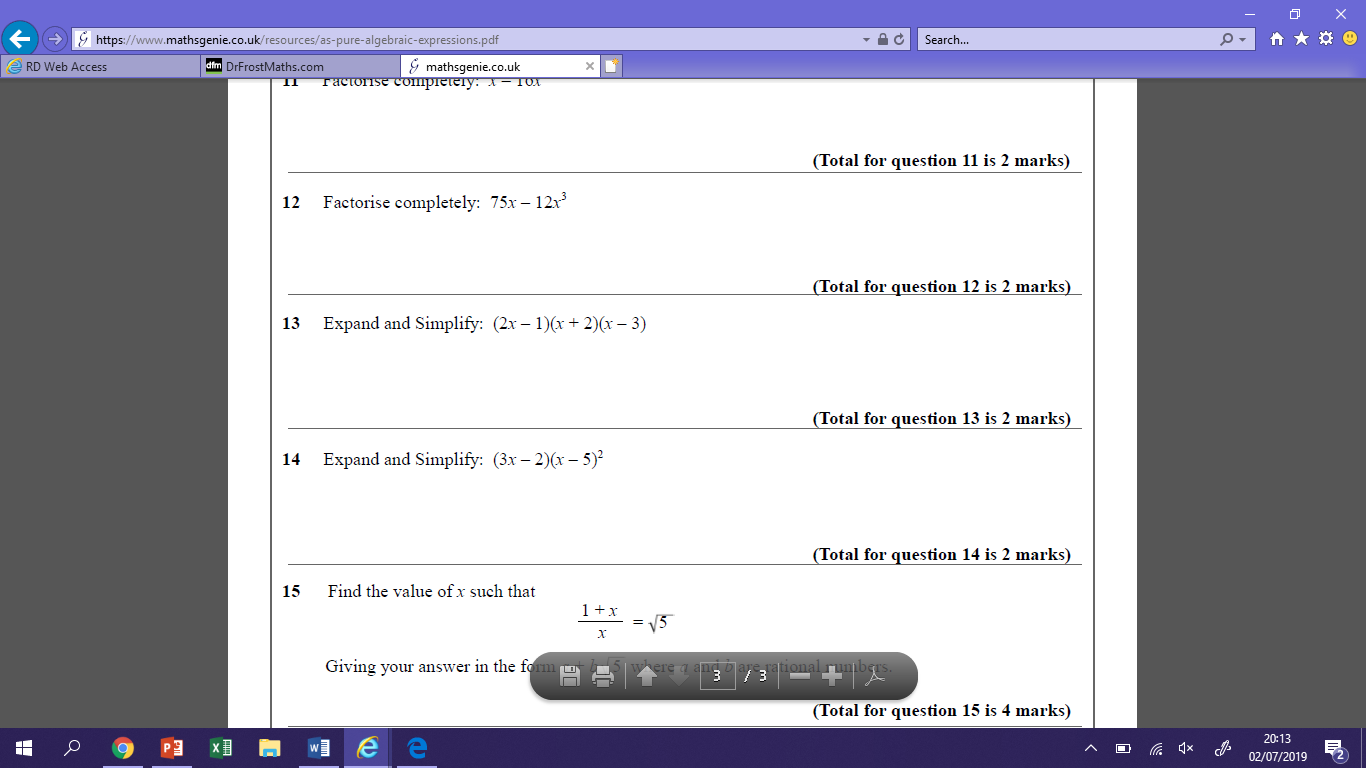
**Page 58:** Exponentials and Logarithms

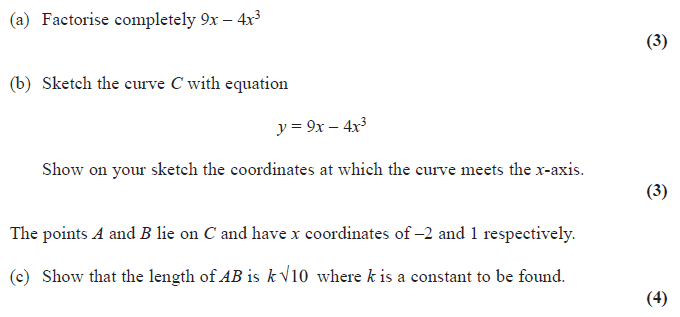
**Algebraic Expressions**

**Practicing the Technique**

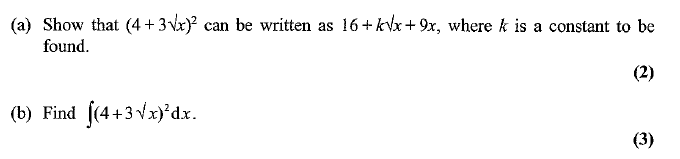
 **2**

**3**

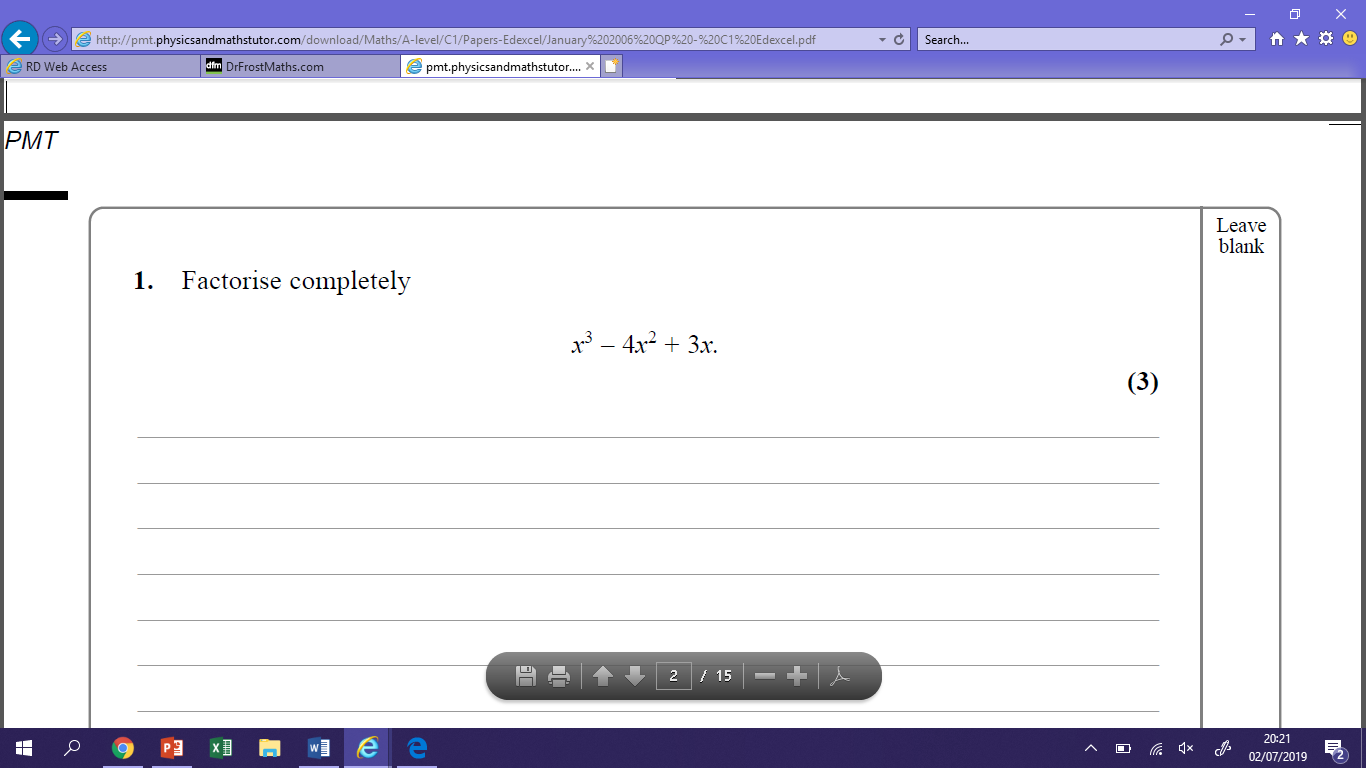
**4** 

**Exam Questions**

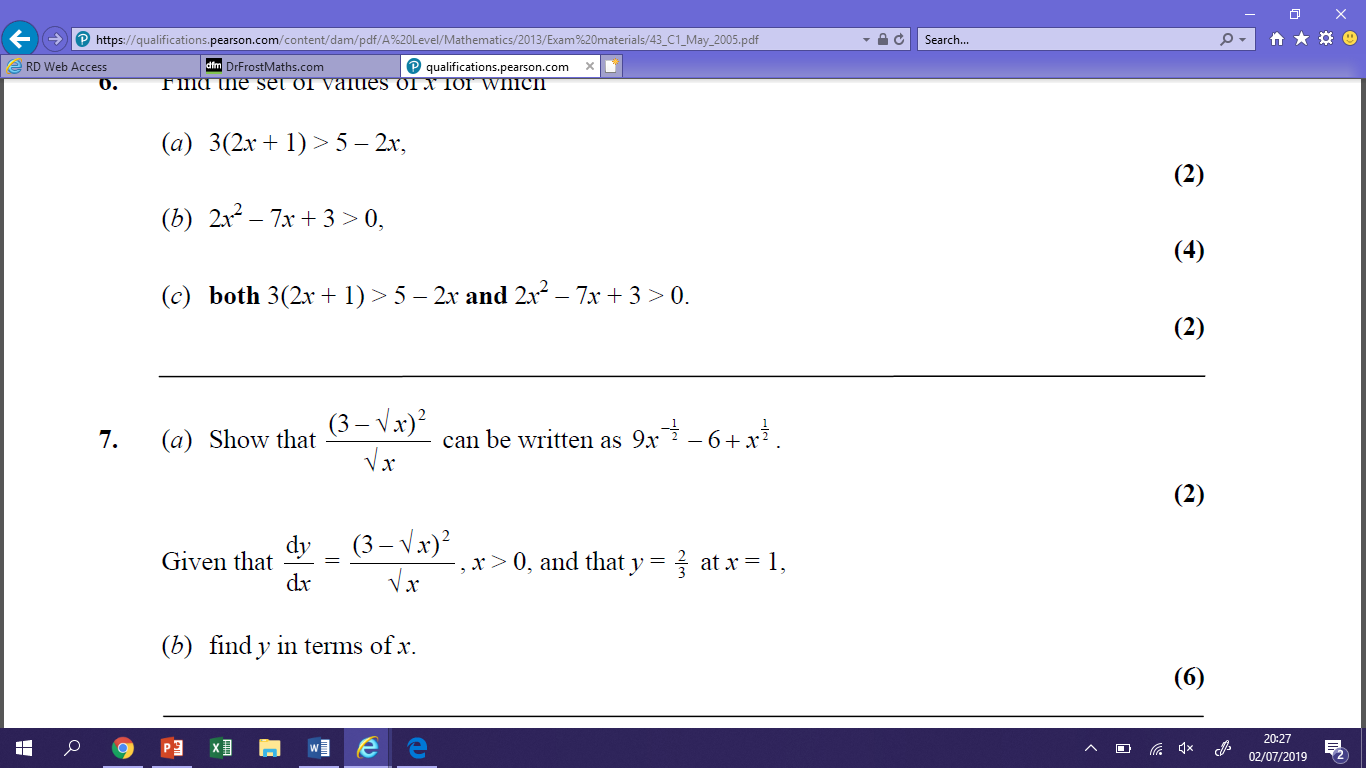
**1)**

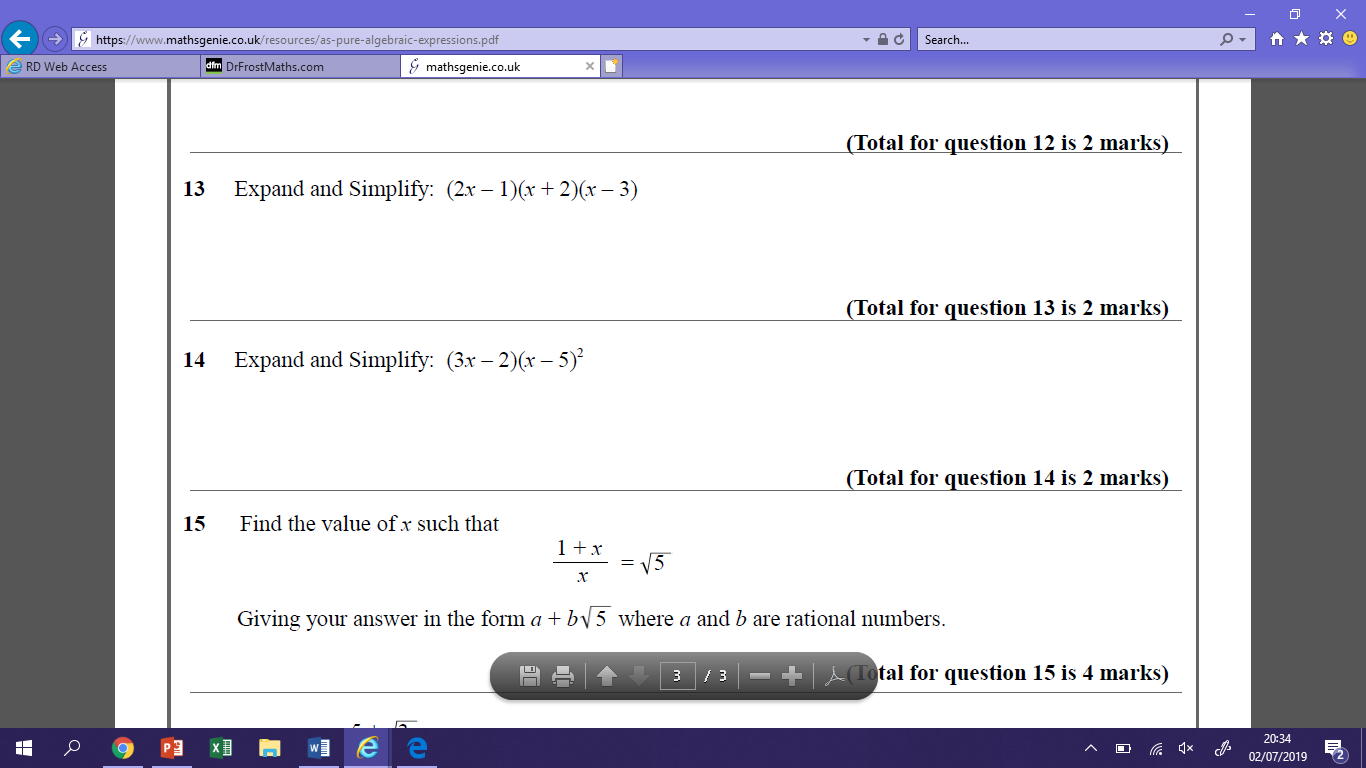


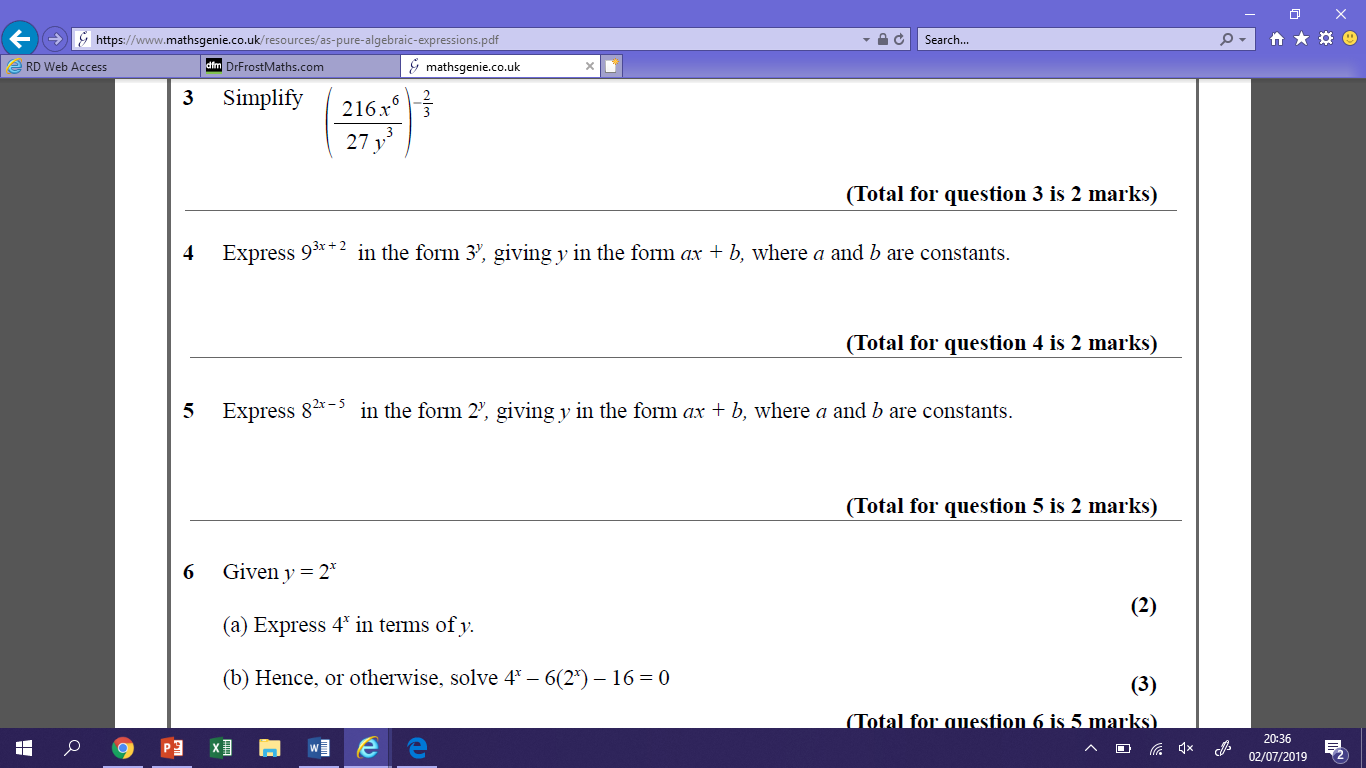
**2)**



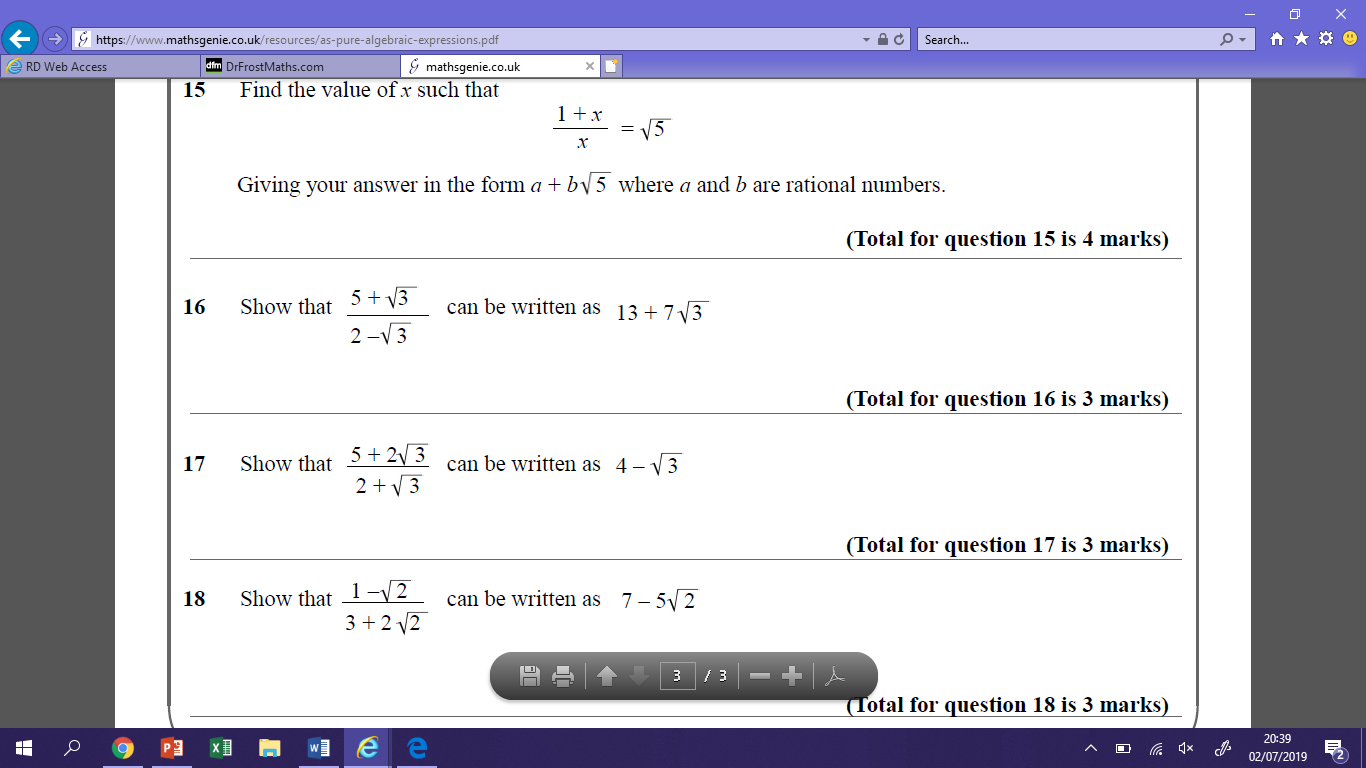
**3)**

**4)**

**5)**



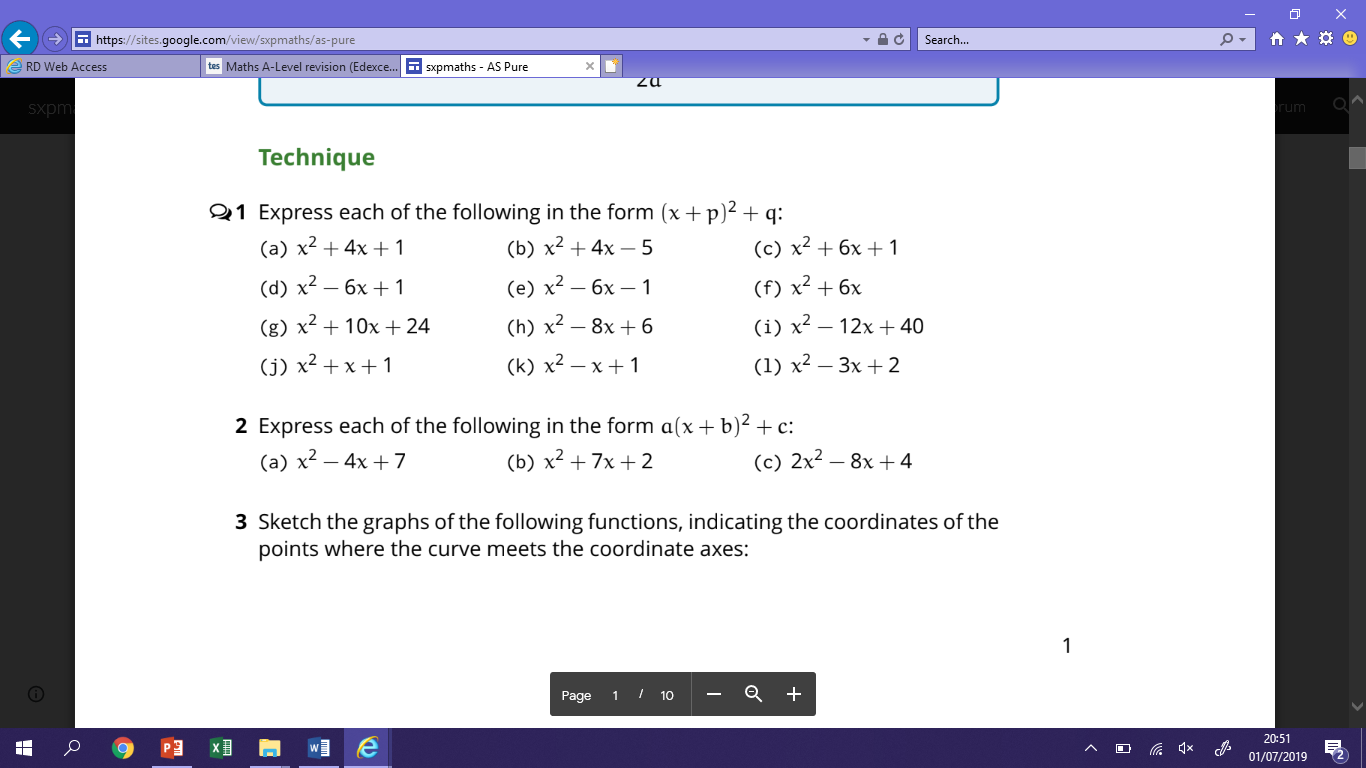
**6)**

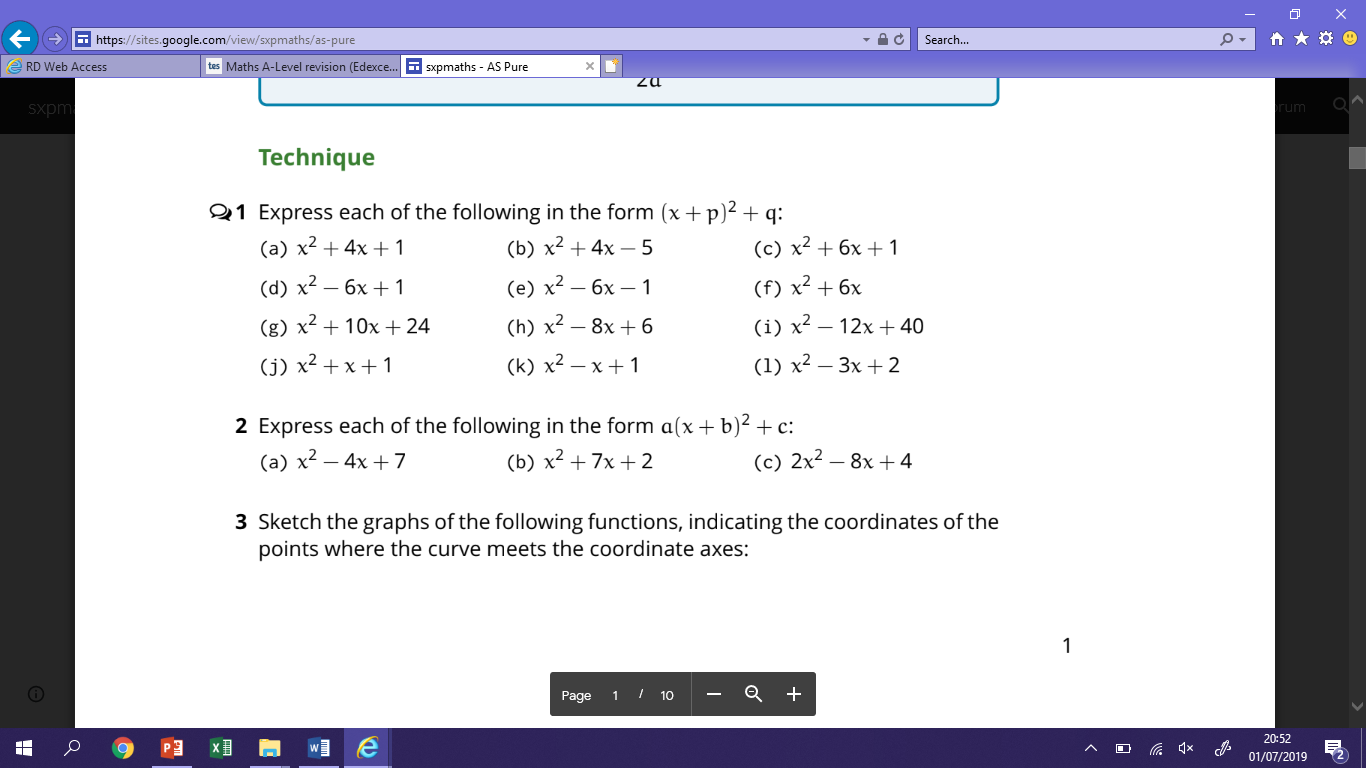


**7)**

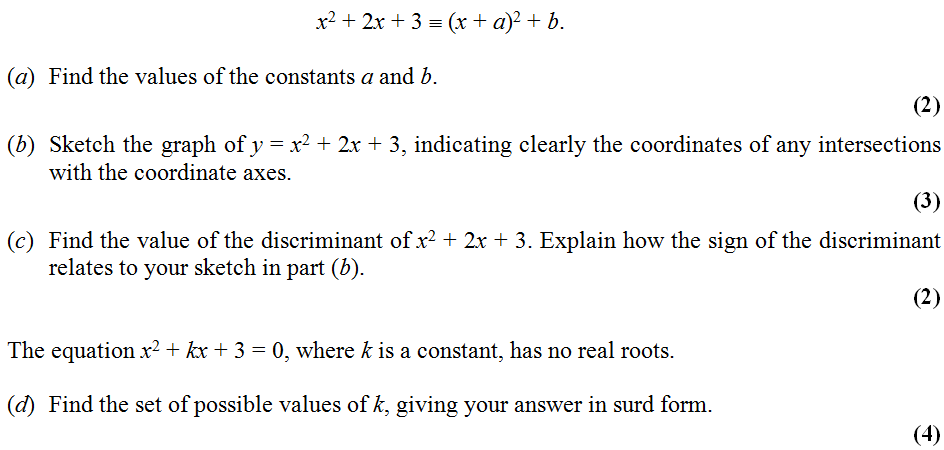
**Quadratics**

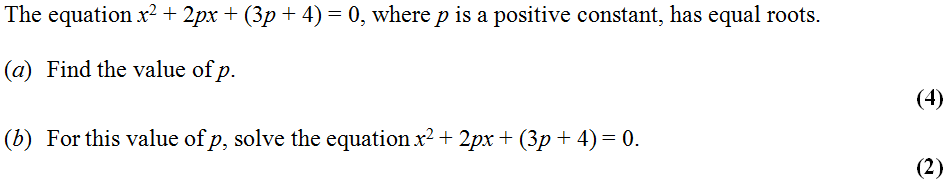
**Practicing the Technique**

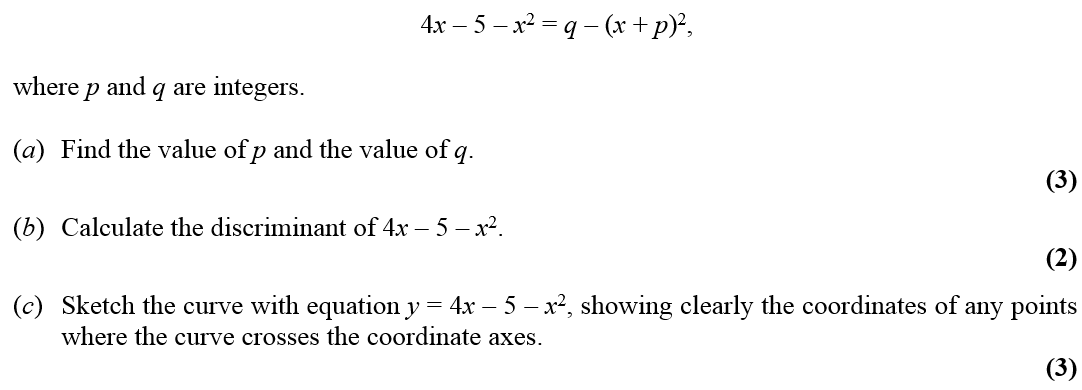


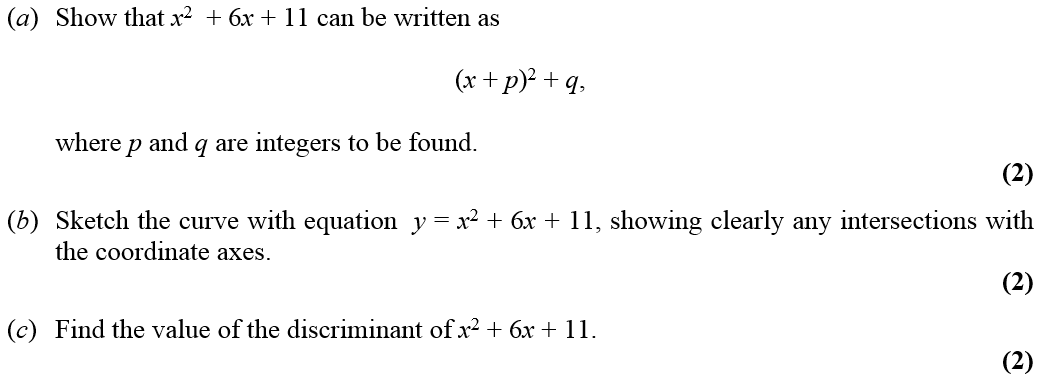


**Exam Questions**

**1)**

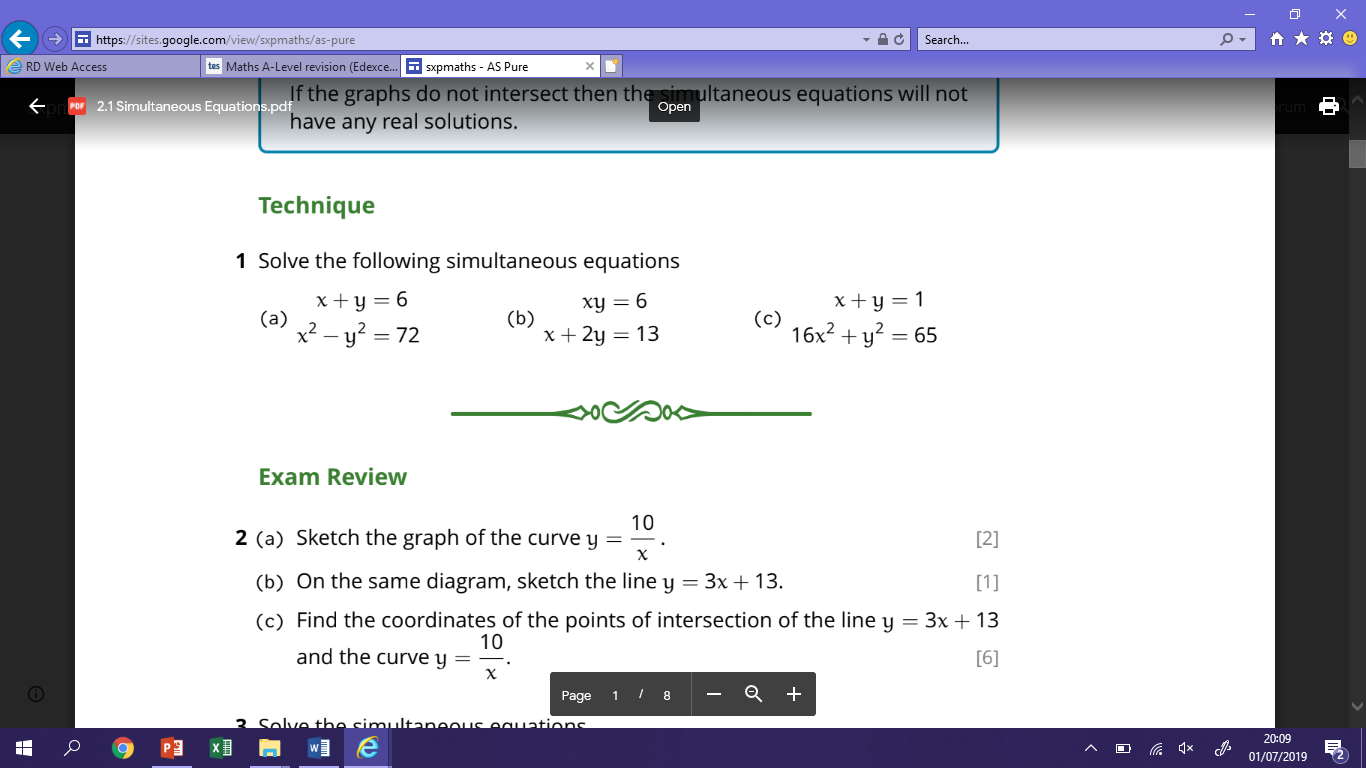
**2)**

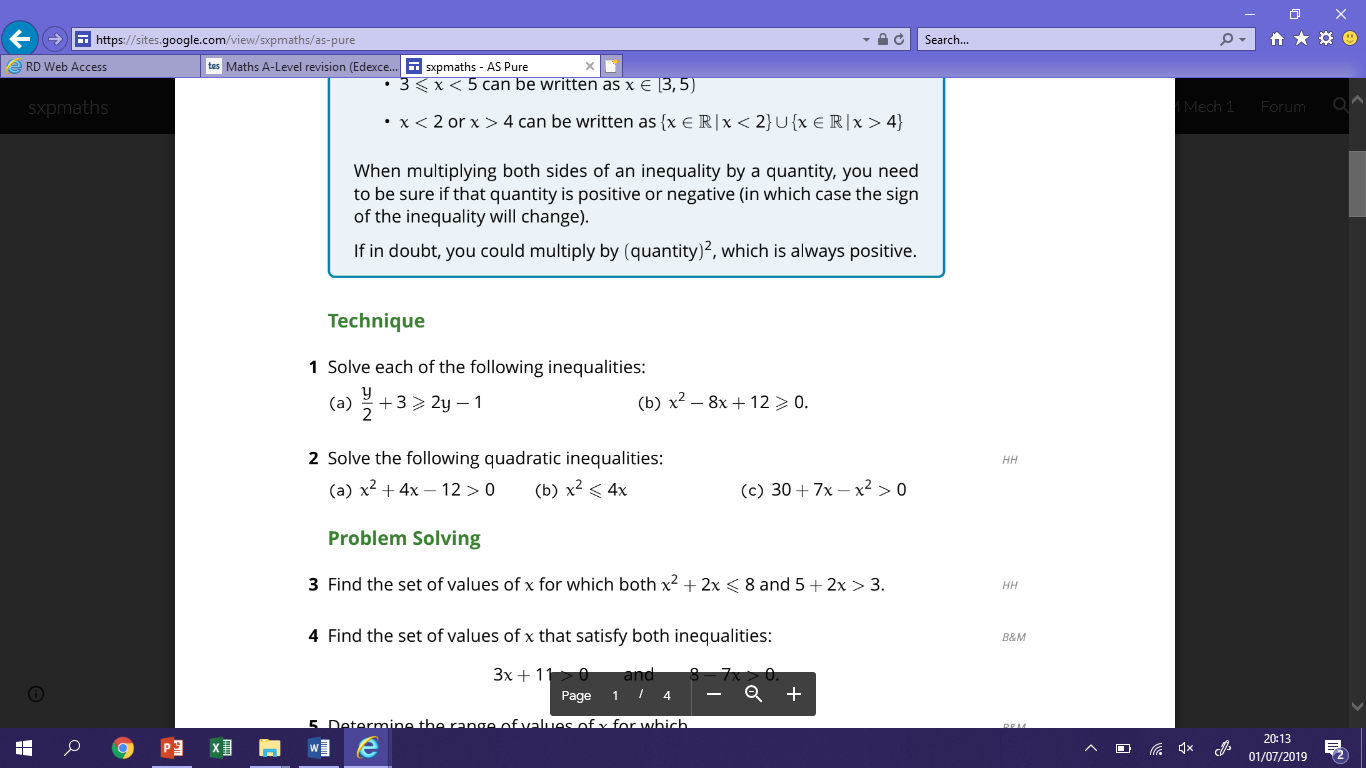
**3)**

**4)** 

**Equations and Inequalities**

**Practicing the technique**





**Exam Questions**

**1)** Find the solutions to the simultaneous equations. ***You must show all working***

*y* – 2*x* = 3

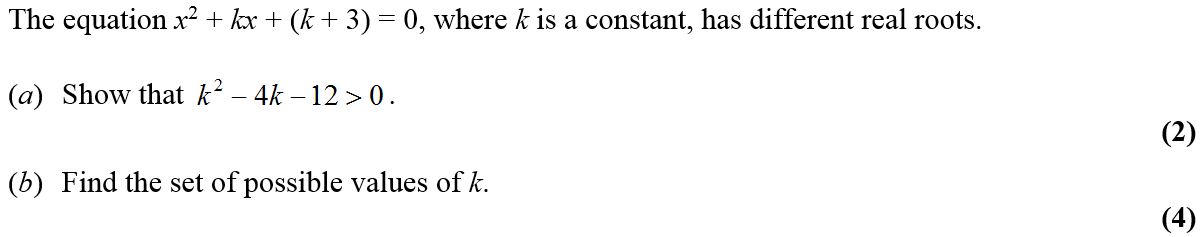
*x*2 + *y*2 = 18

*x =*……………………. *y =*…………………….

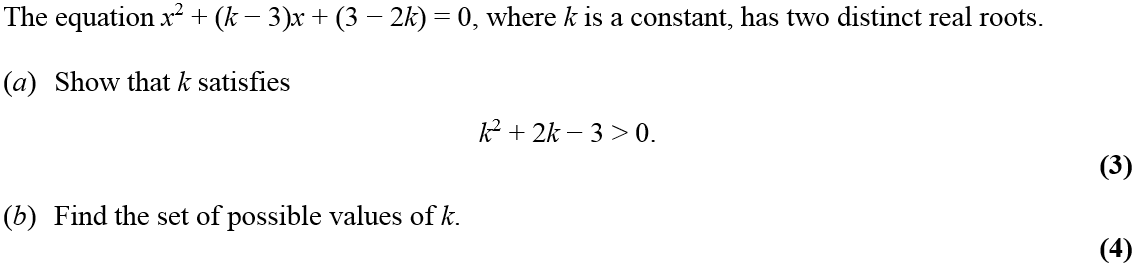
or *x =*……………………. *y =*…………………….

(Total 7 marks)

2)

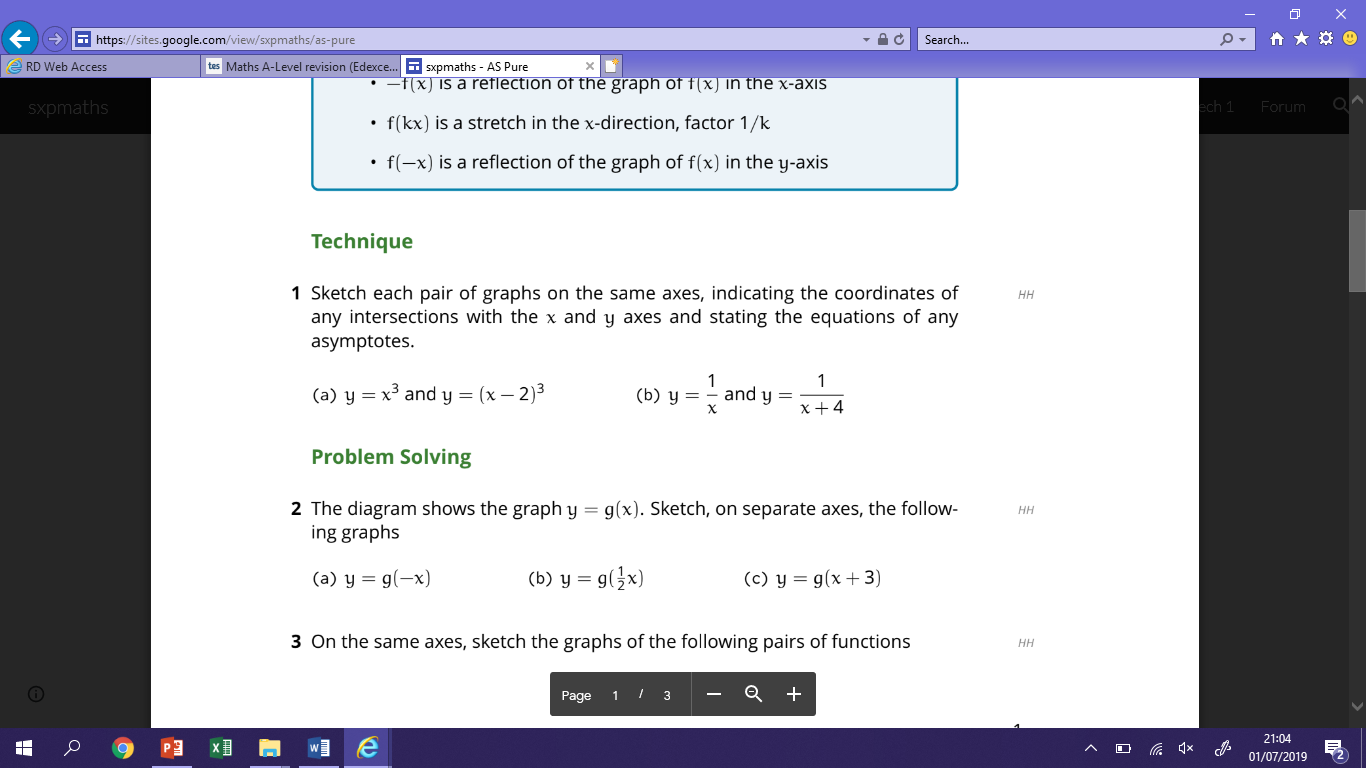
****

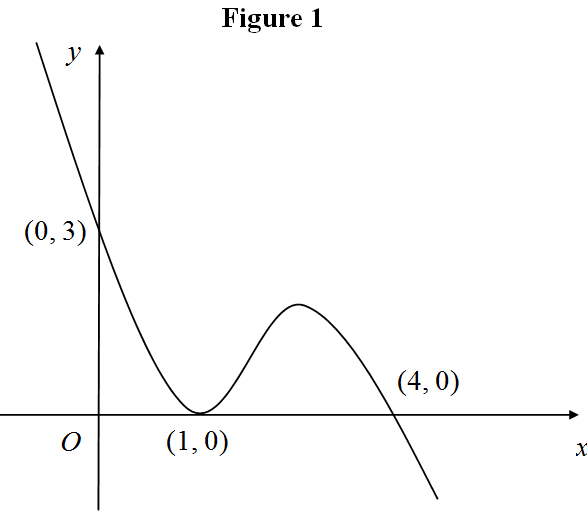
3)

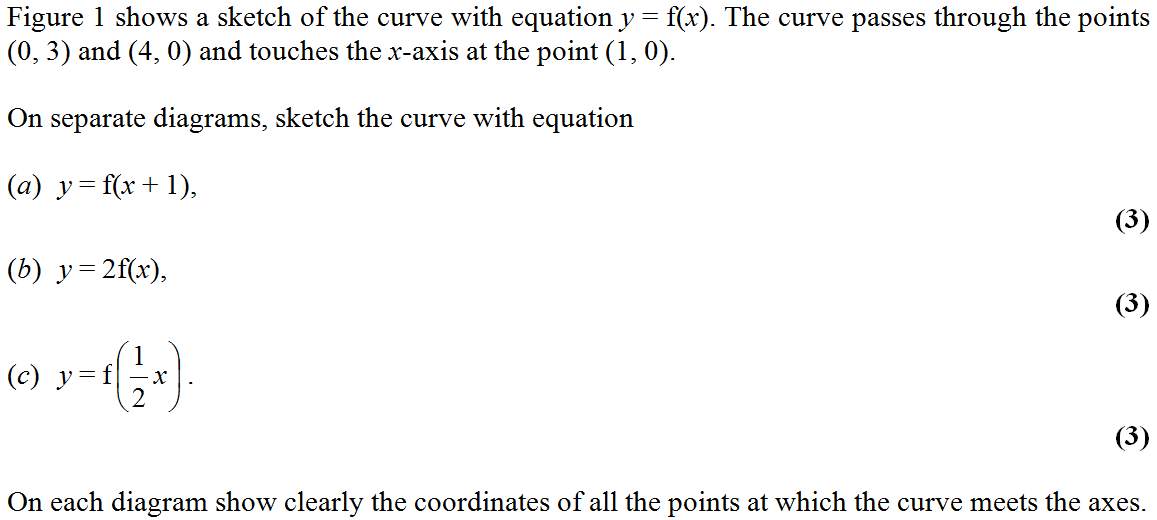
****

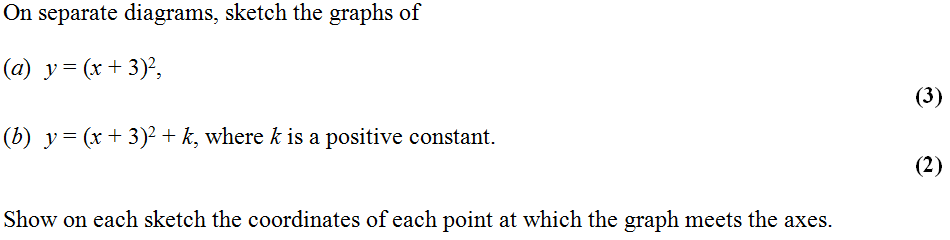
**Graphs and Transformations**

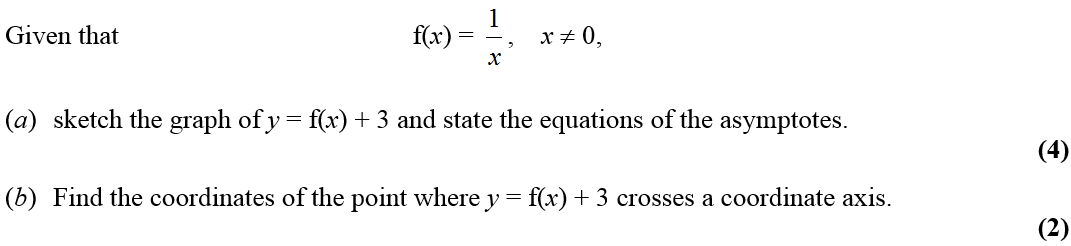
**Practicing the technique**

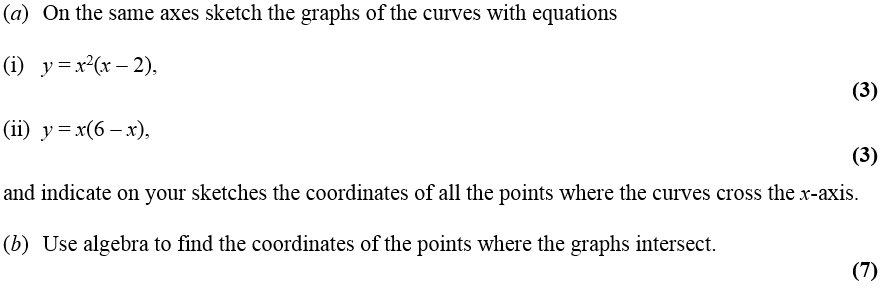


**Exam Questions**

**1)** ****

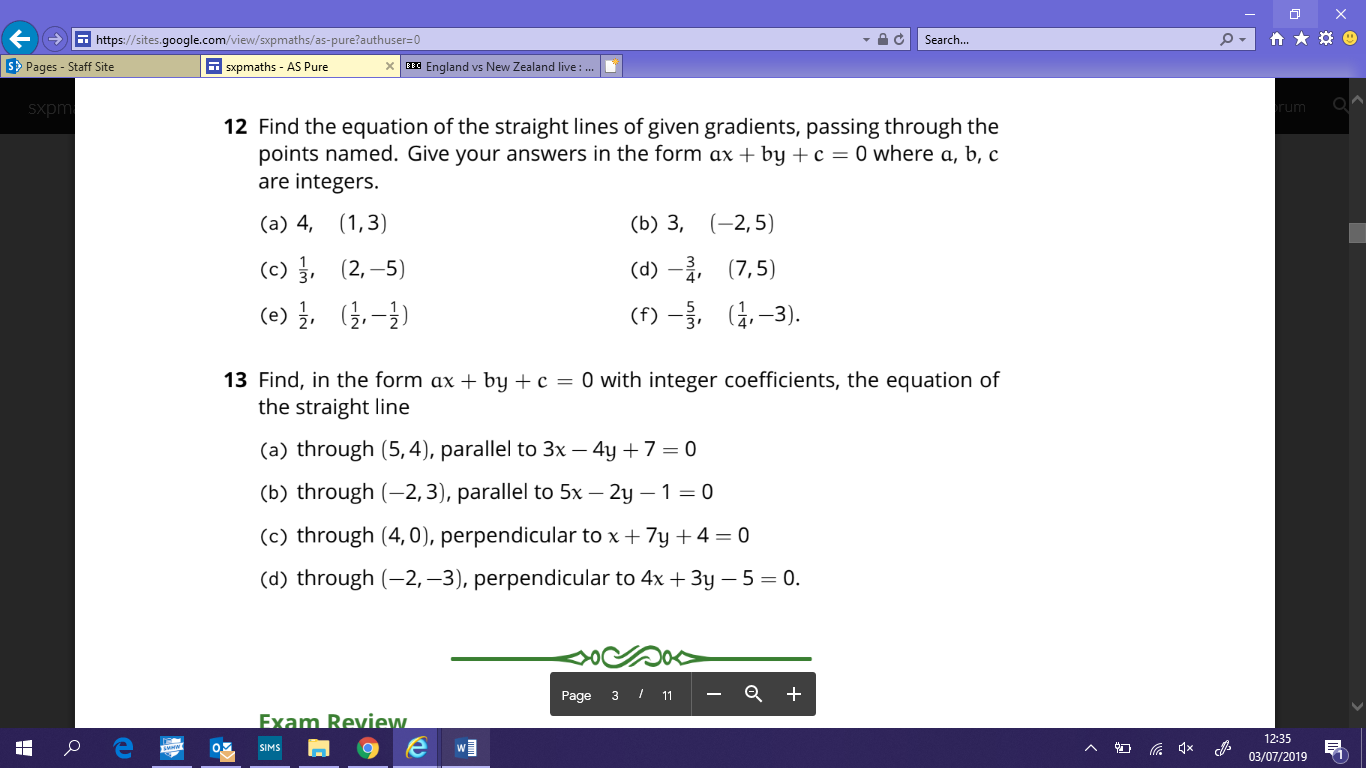
**2)**

**3)** ****

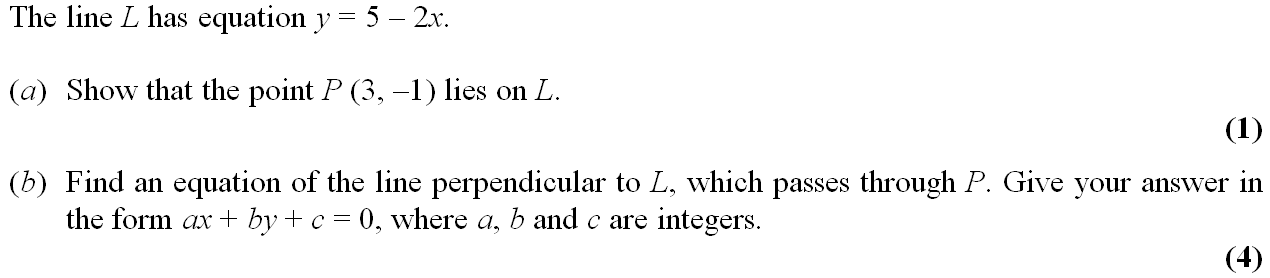
**4)** ****

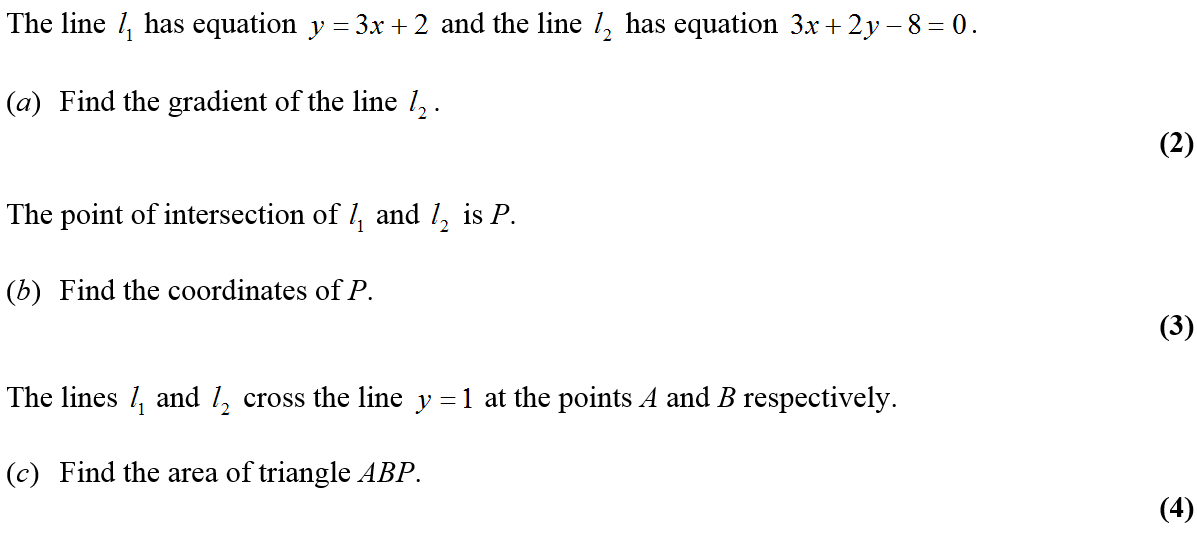
**Straight Line Graphs**

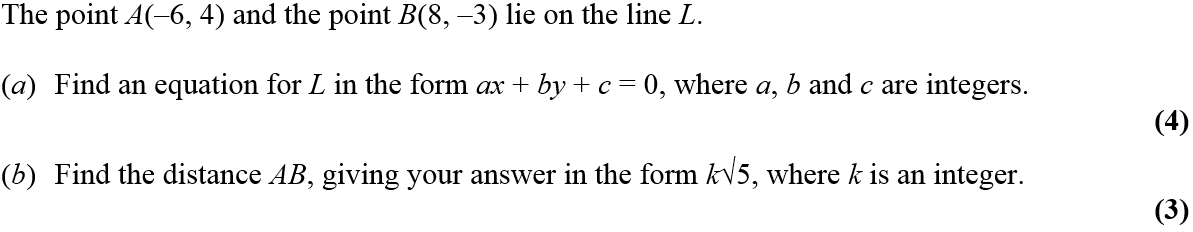
**Practicing the Technique**

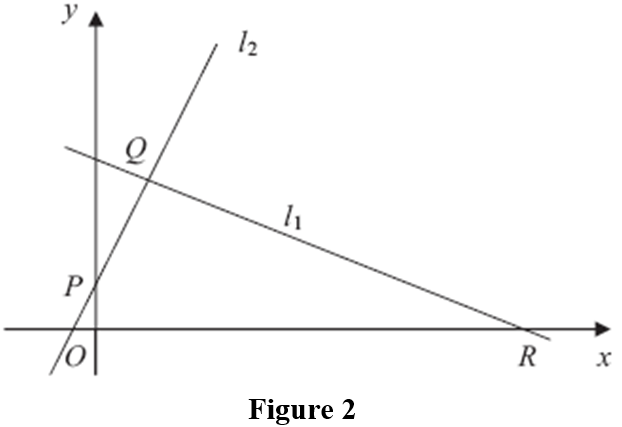


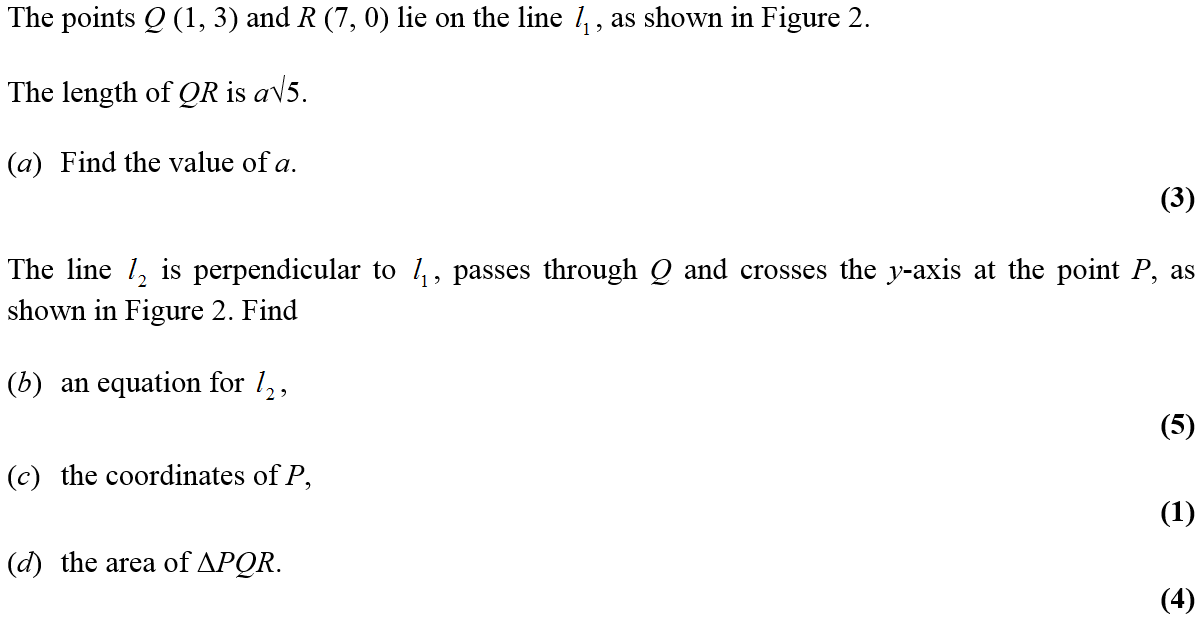
**Exam Questions**

**1)**

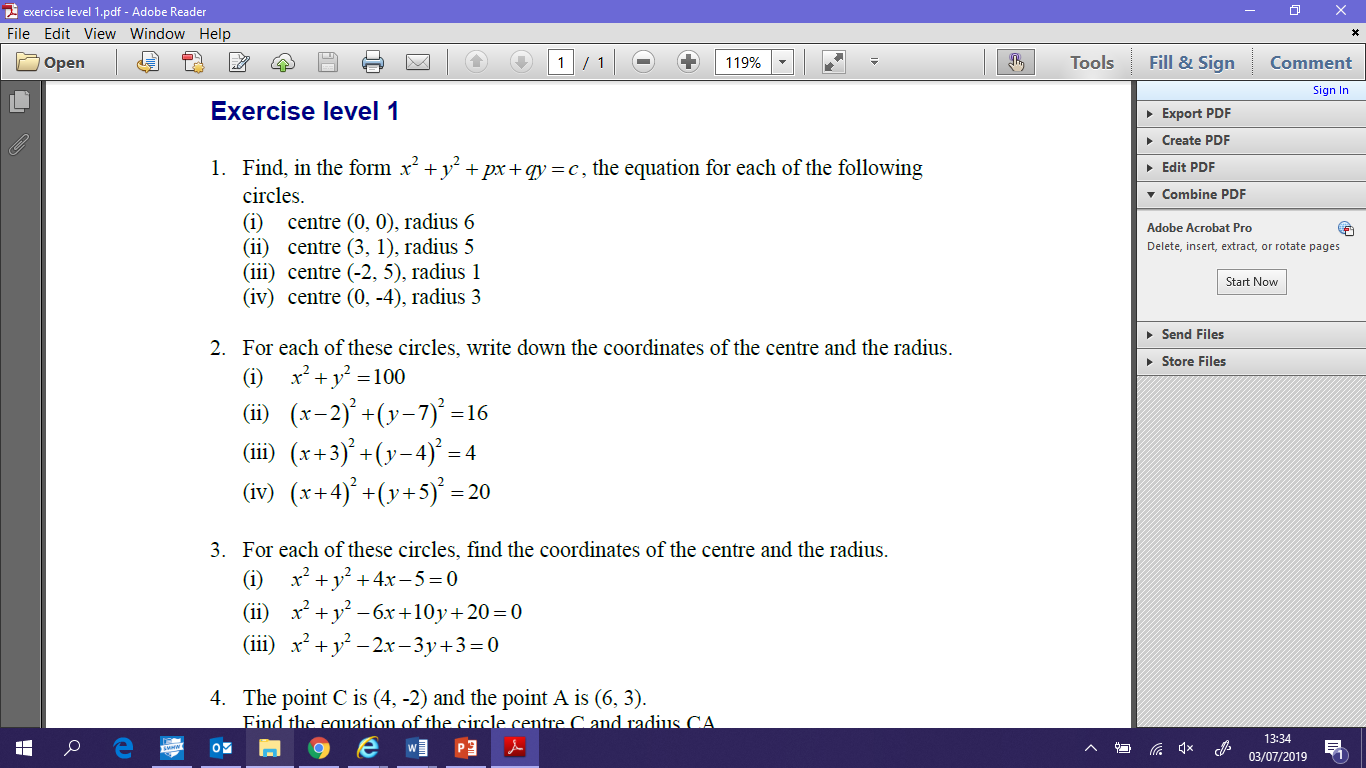
**2)**

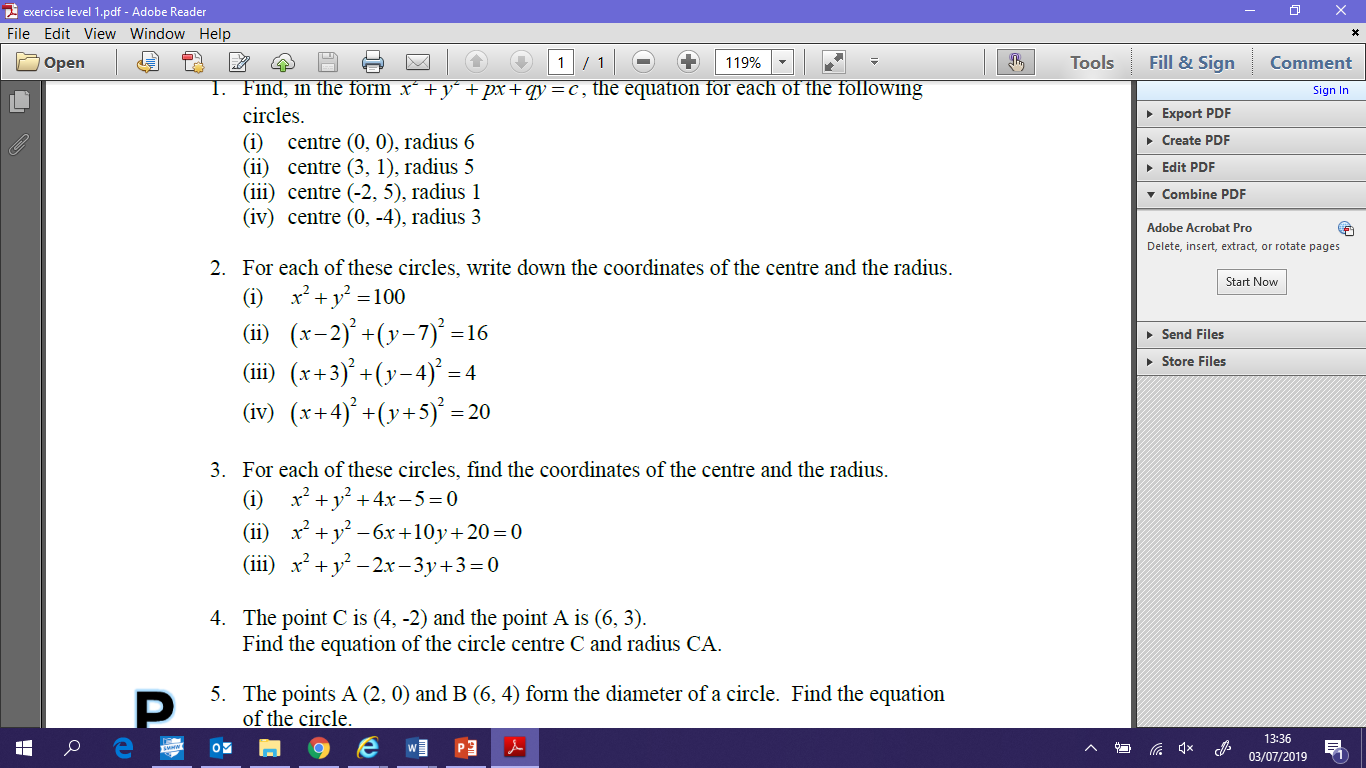
**3)**

**4)**

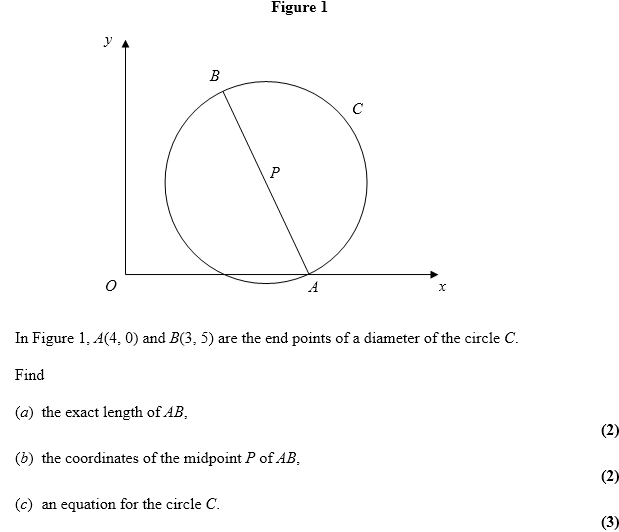
****

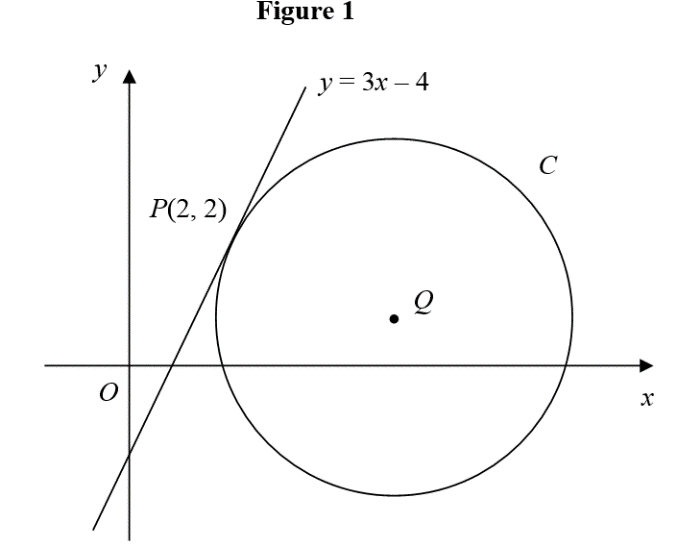
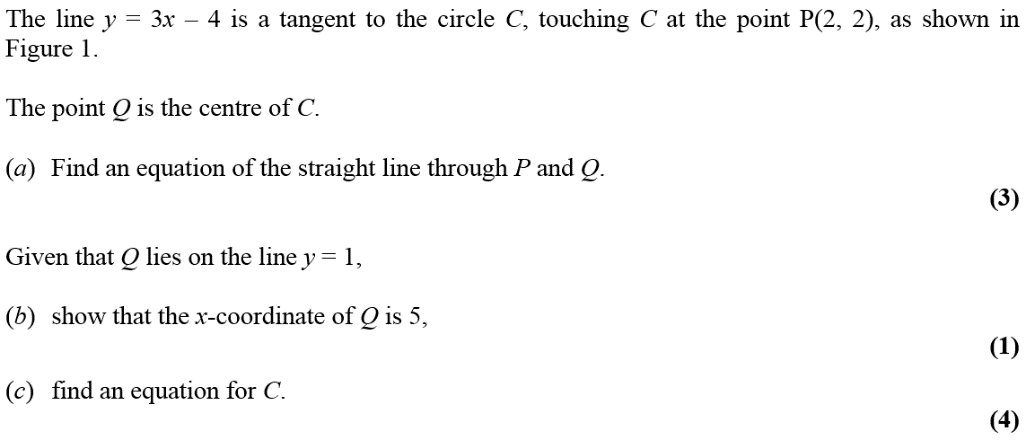
**Circles**

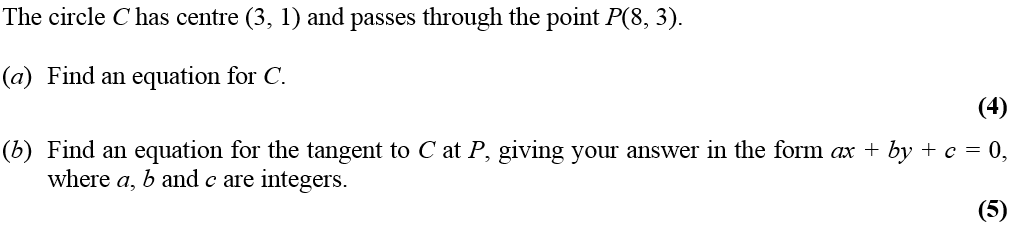
**Practicing the Technique**



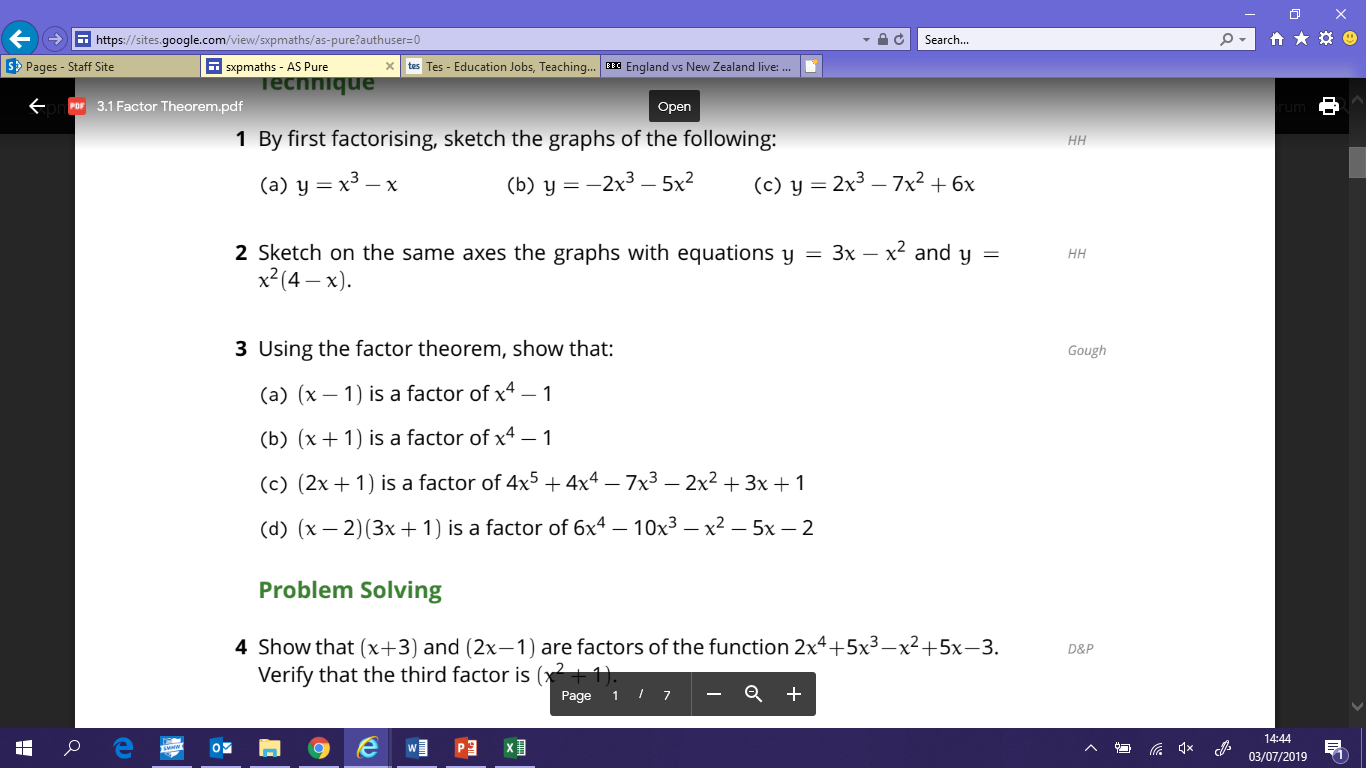
**Exam Questions**

**1)**

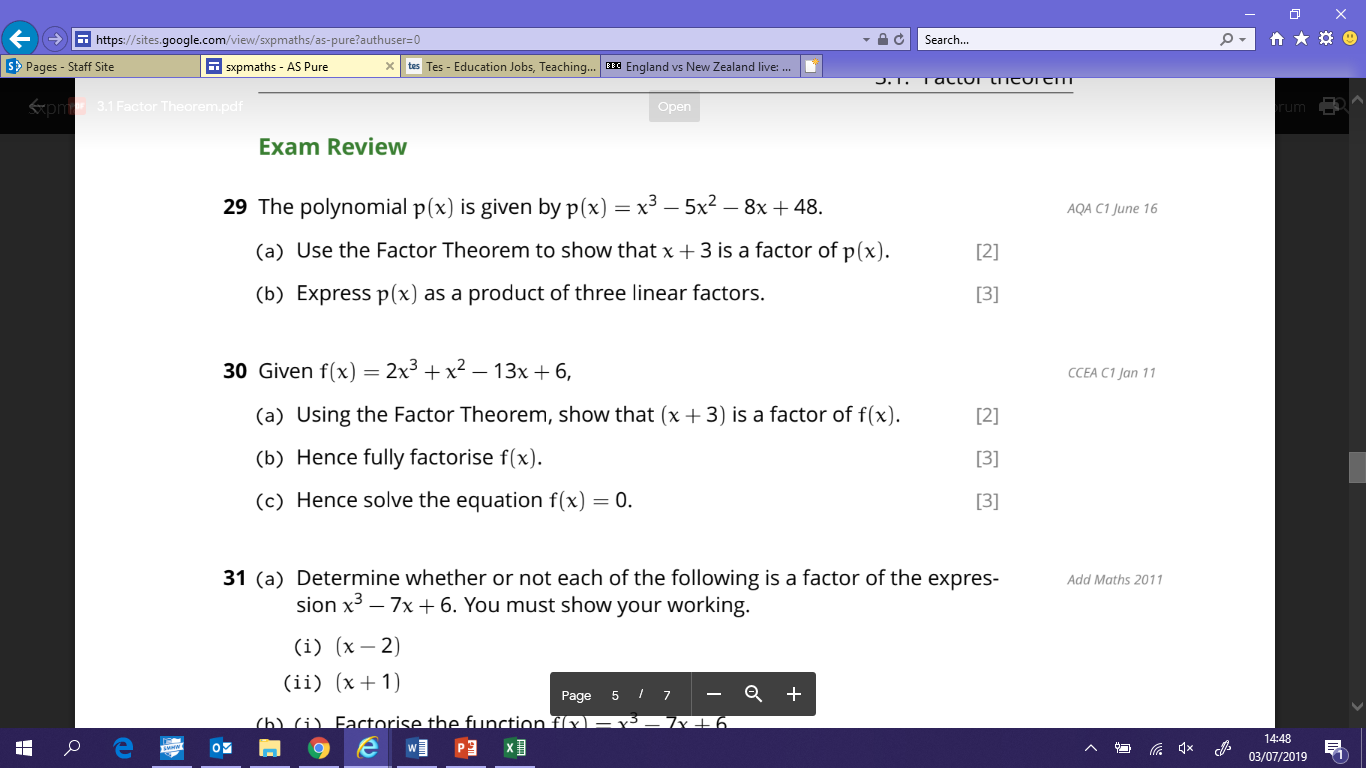
******2)**

**3)**

**Algebraic Methods**

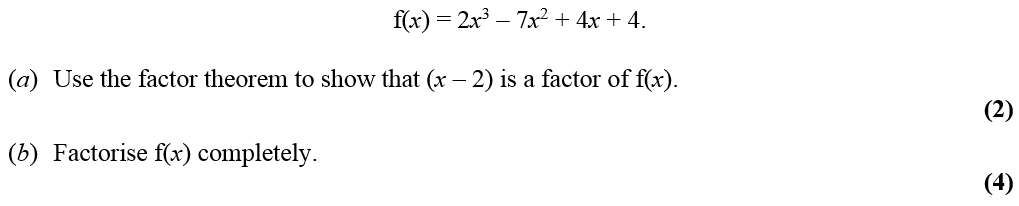
**Practicing the Technique**

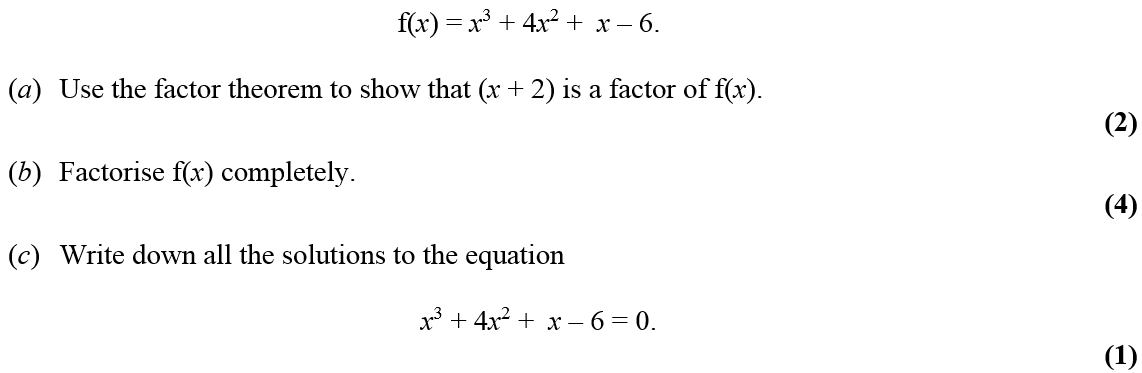
**1)**



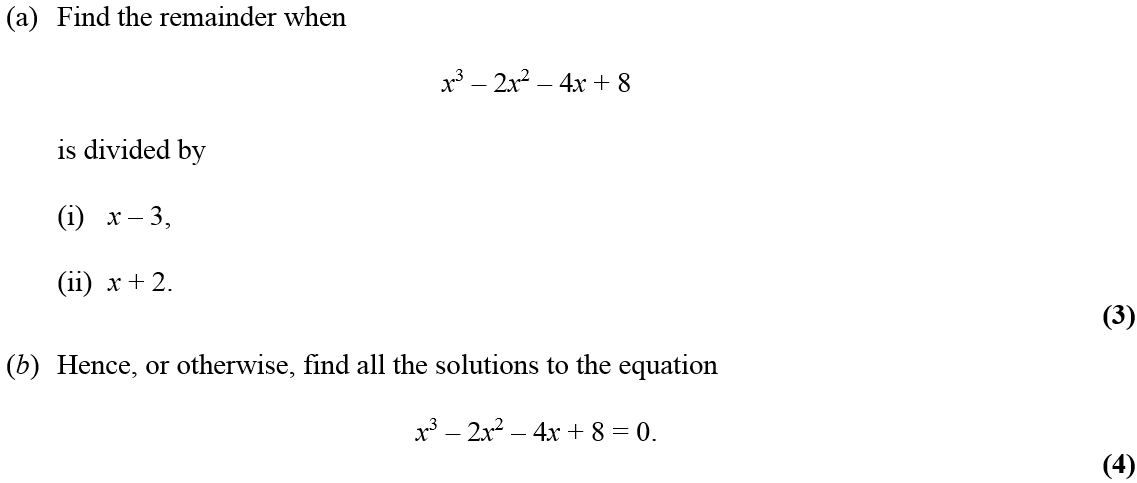
**2)**

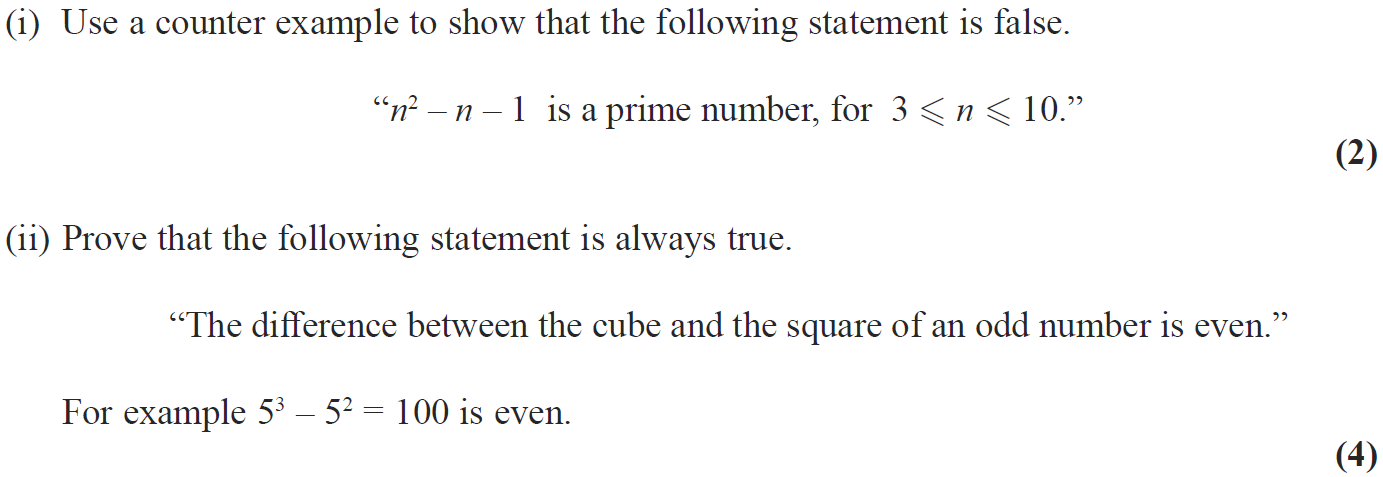
**Exam Questions**

**1)**

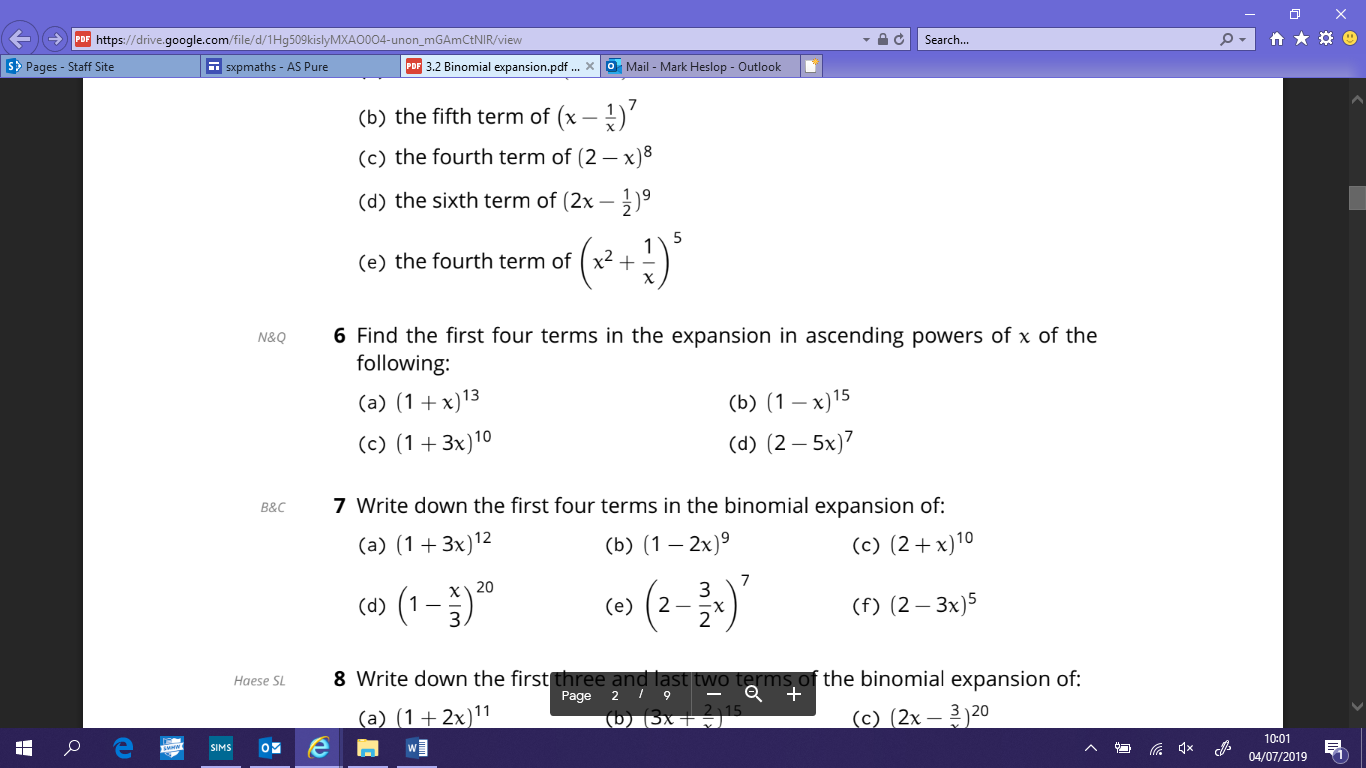
****

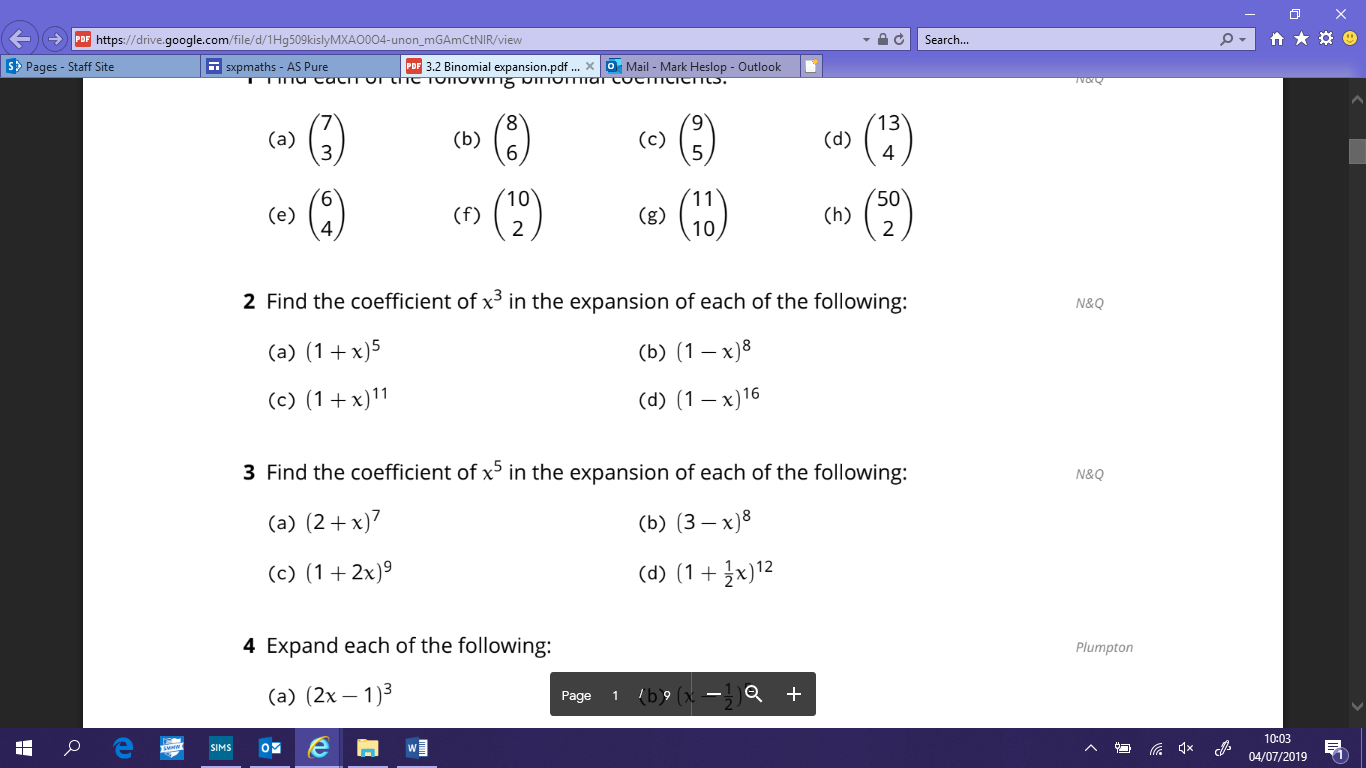
**2)**

**3)**

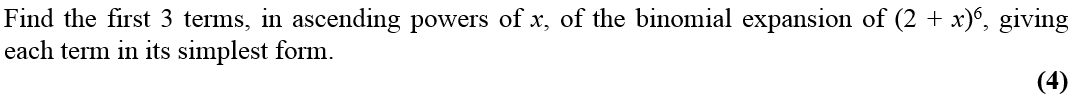
**4)**

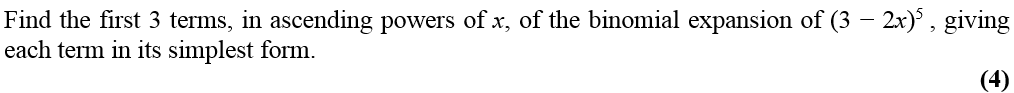
**The Binomial Expansion**

**Practicing the Technique**

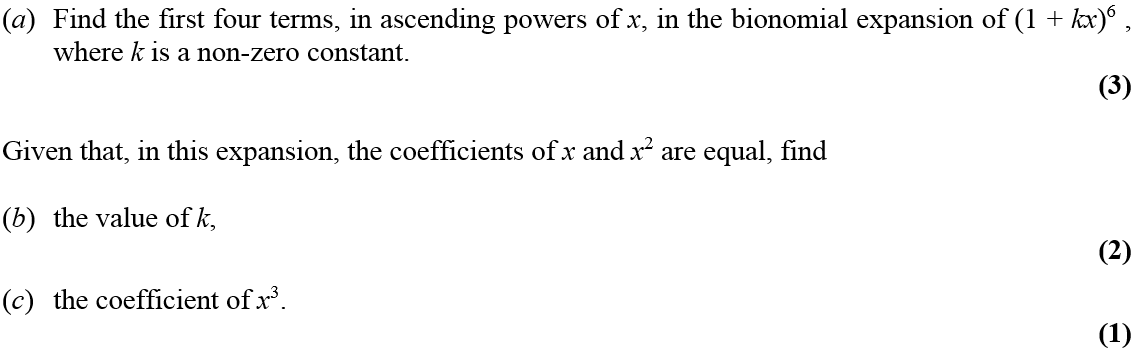


**Exam Questions**

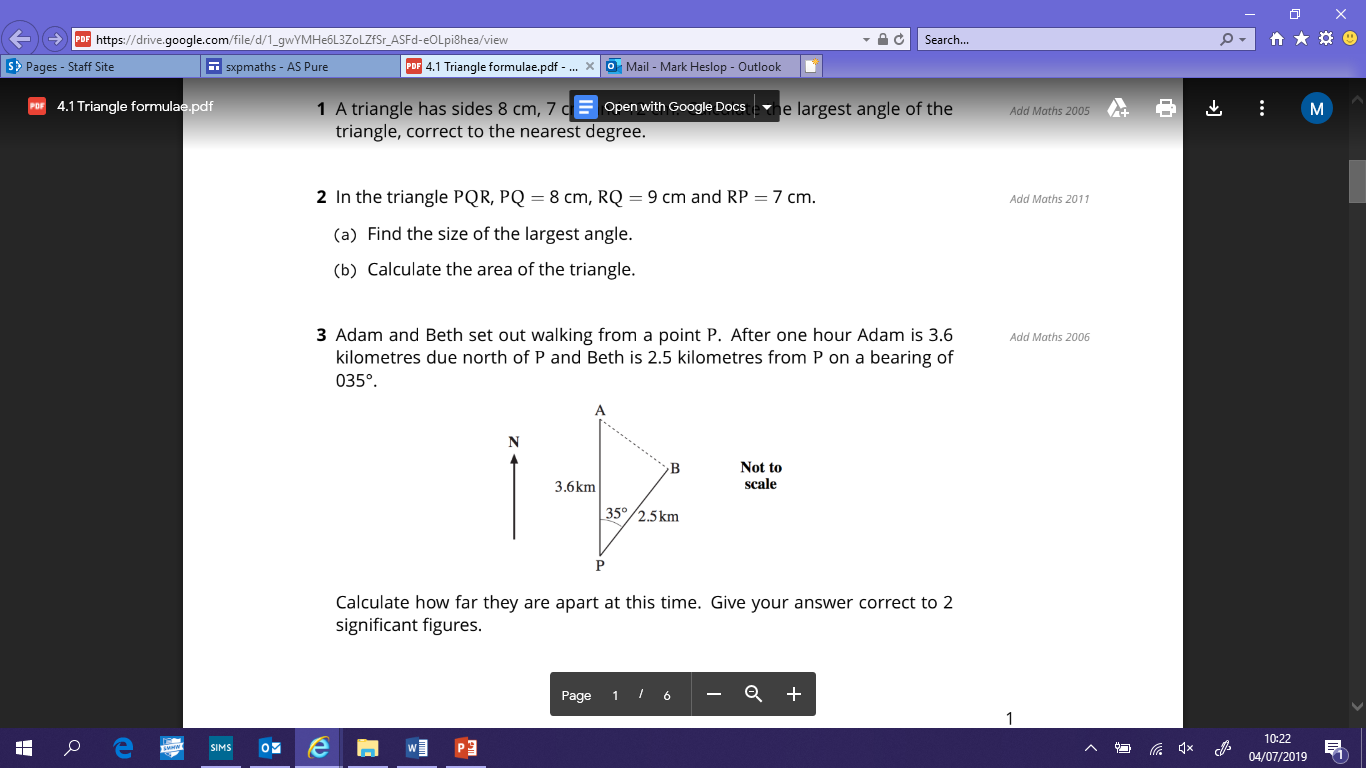
**1)**



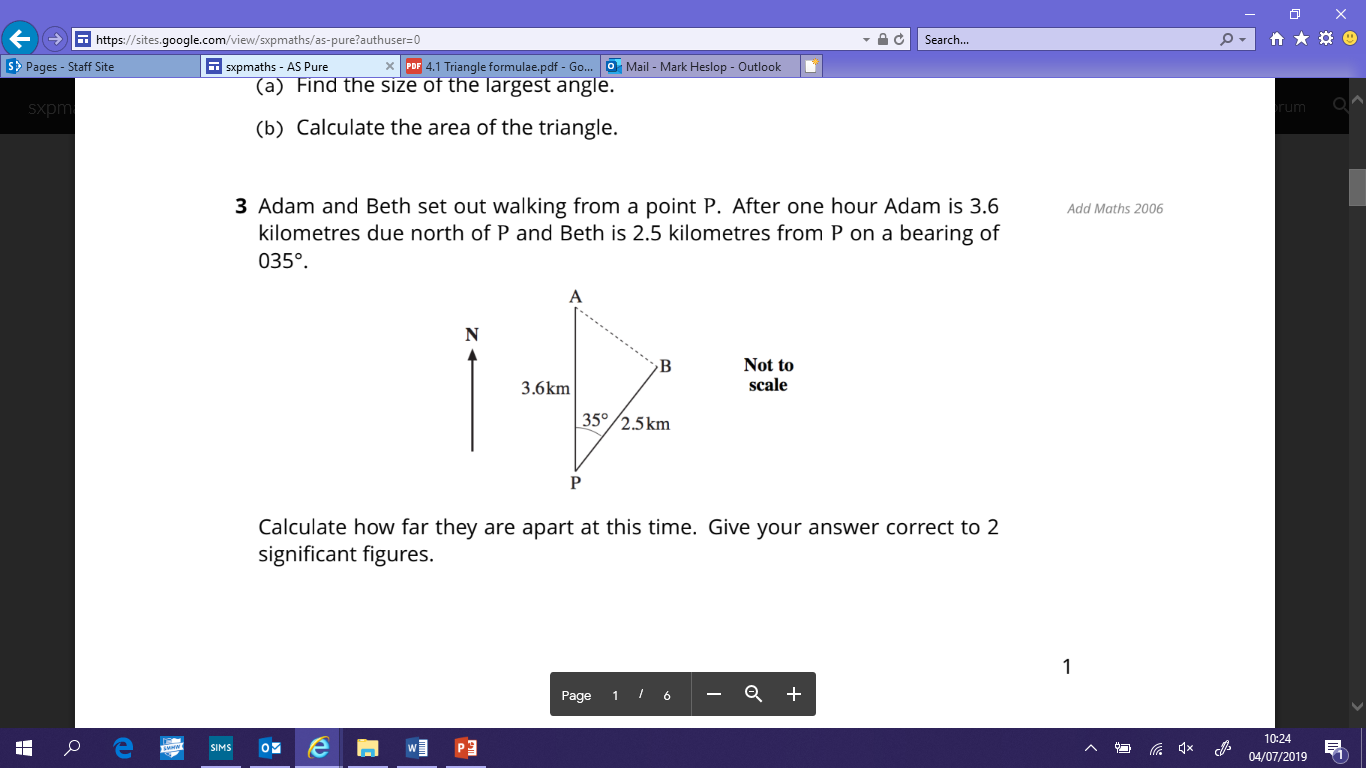
**2)**

**3)**

**Trigonometric Ratios**

**Practicing the Technique**

**1)**

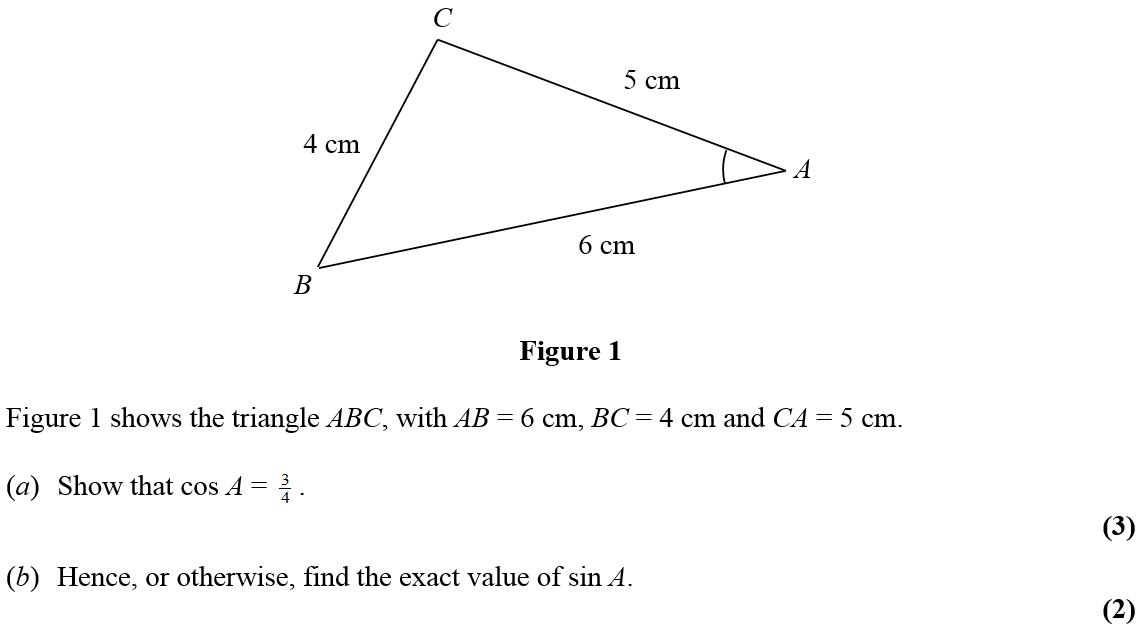


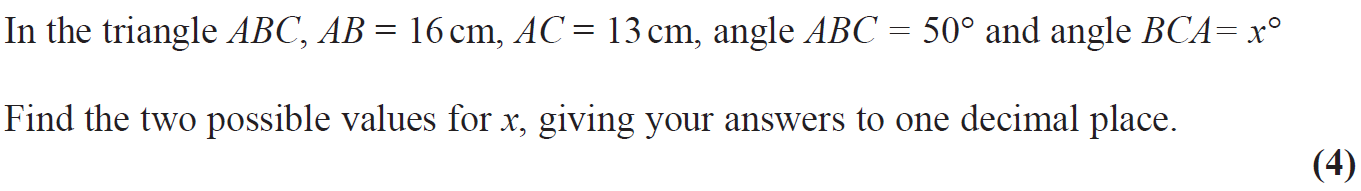
**2)**

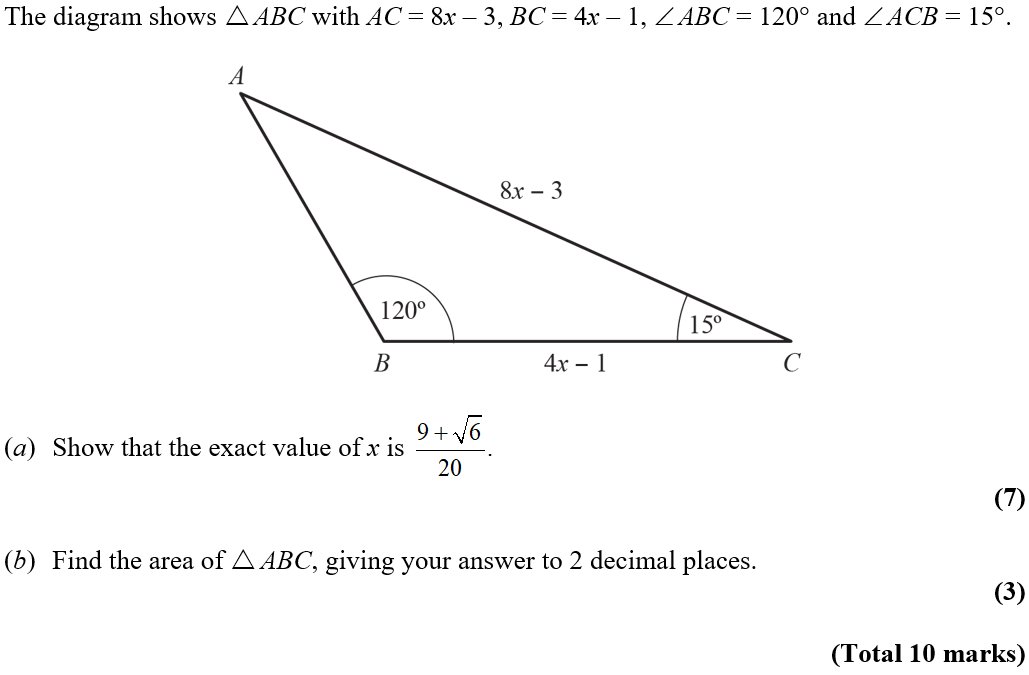
**Find the distance between Adam and Beth after one hour**

**Exam Questions**

**1)**

****

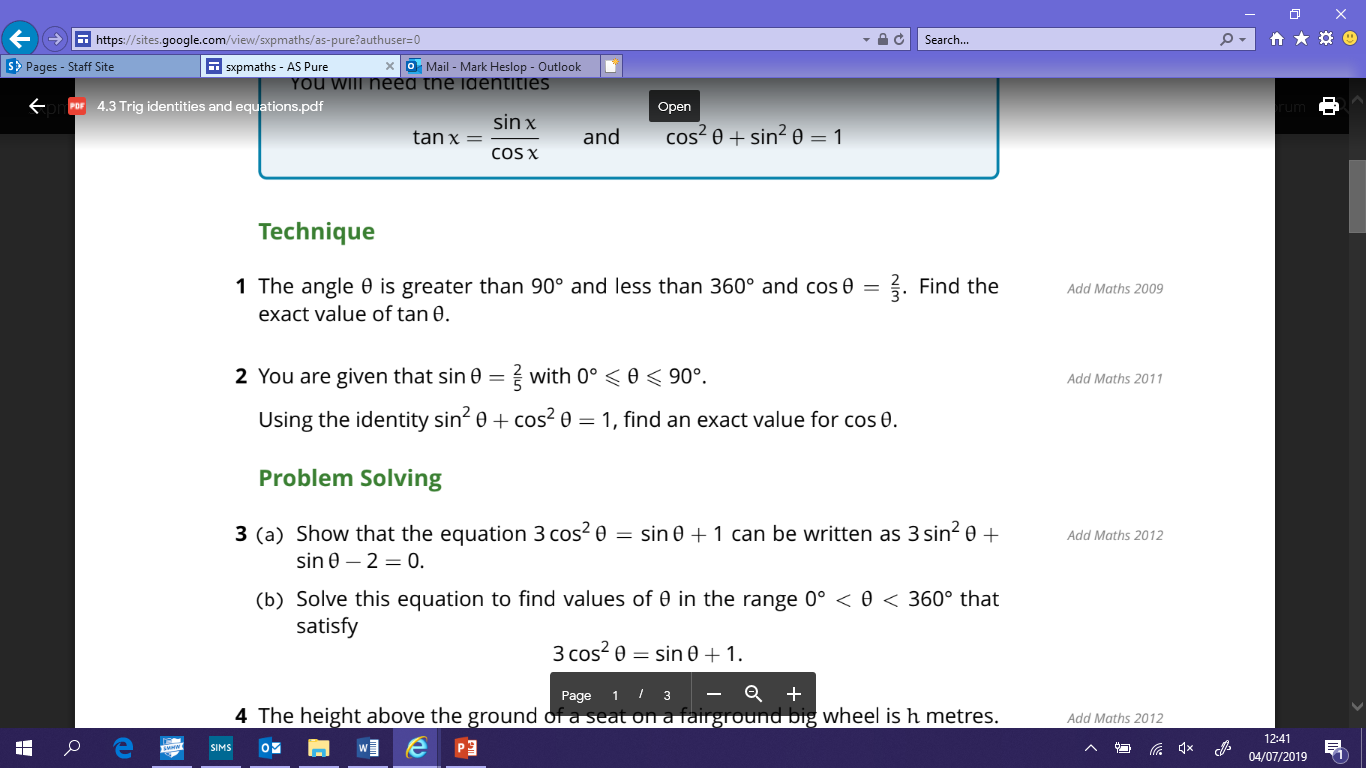
**2)**

**3)**

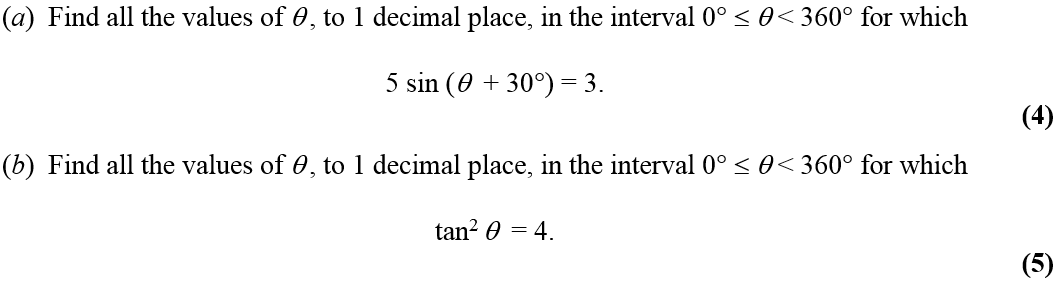
**Trigonometric Identities and Equations**

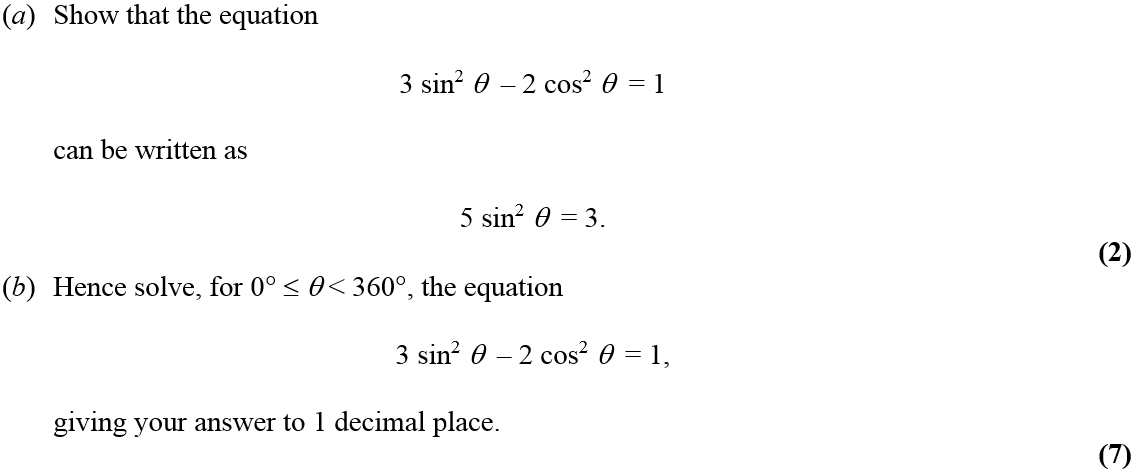
**Practicing the Technique**





**Exam Questions**

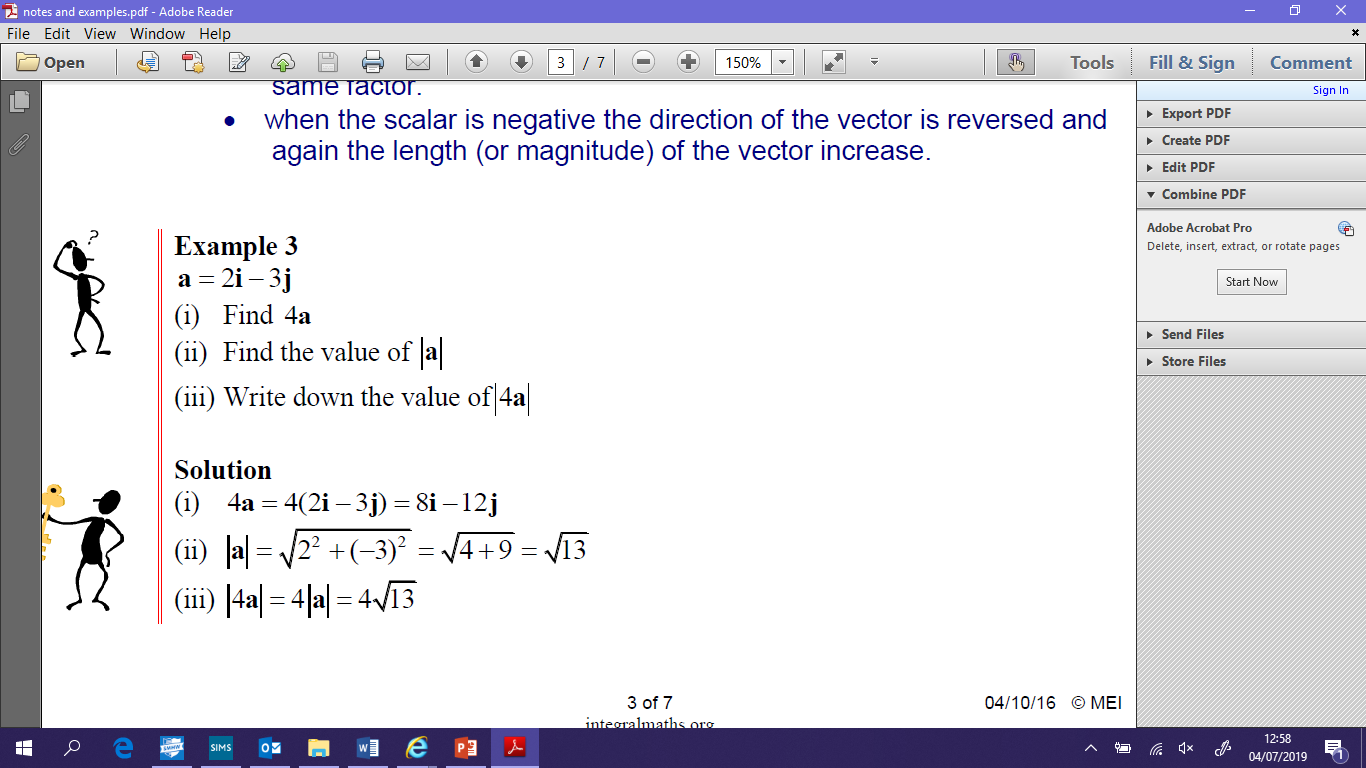
**1)**

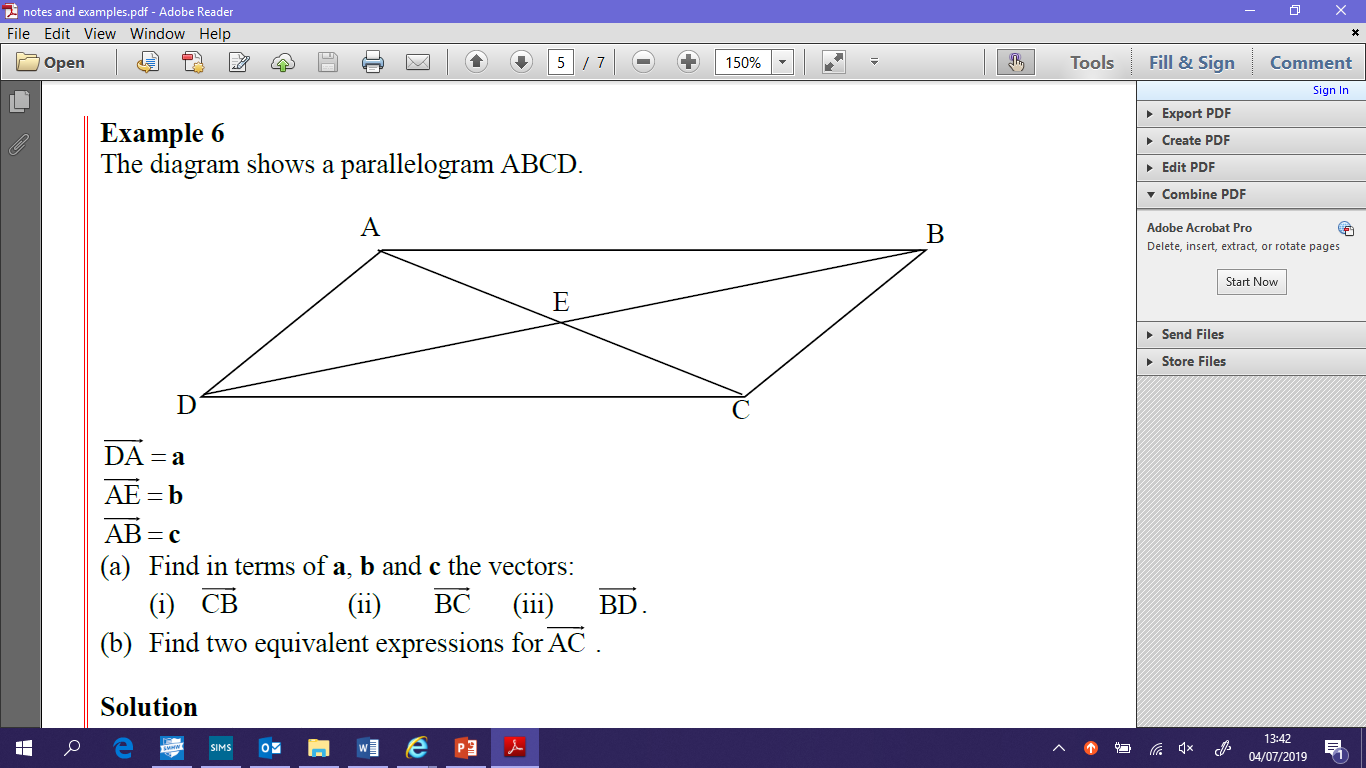
**2) **

**3)**

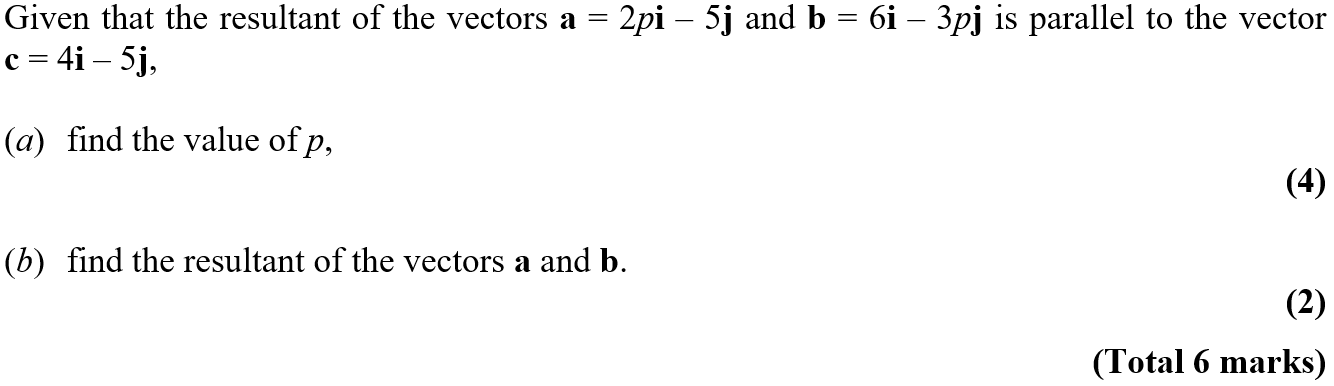
**Vectors**

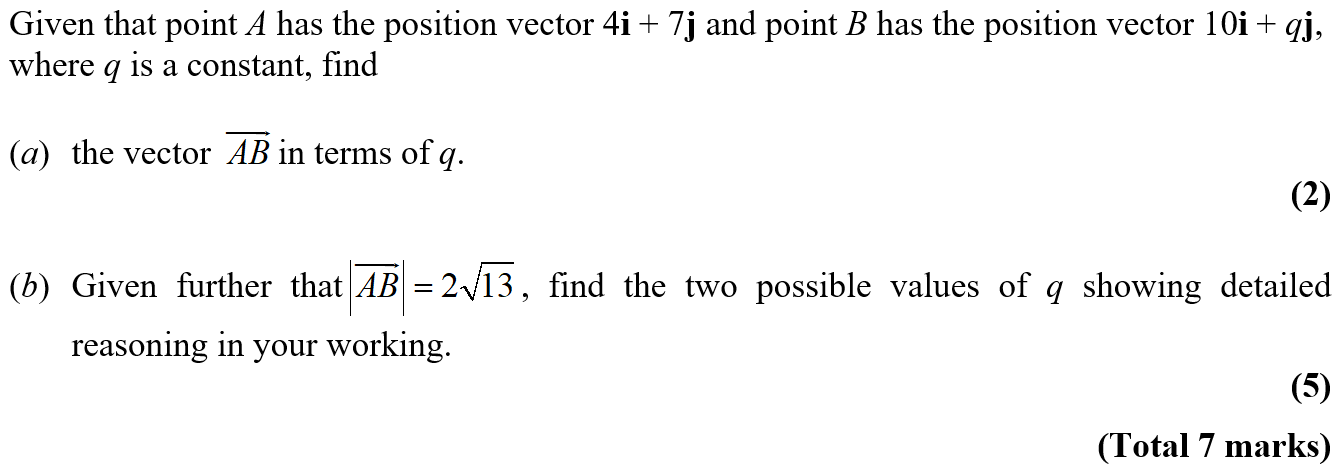
**Practicing the Technique**

**1)**

**2)**

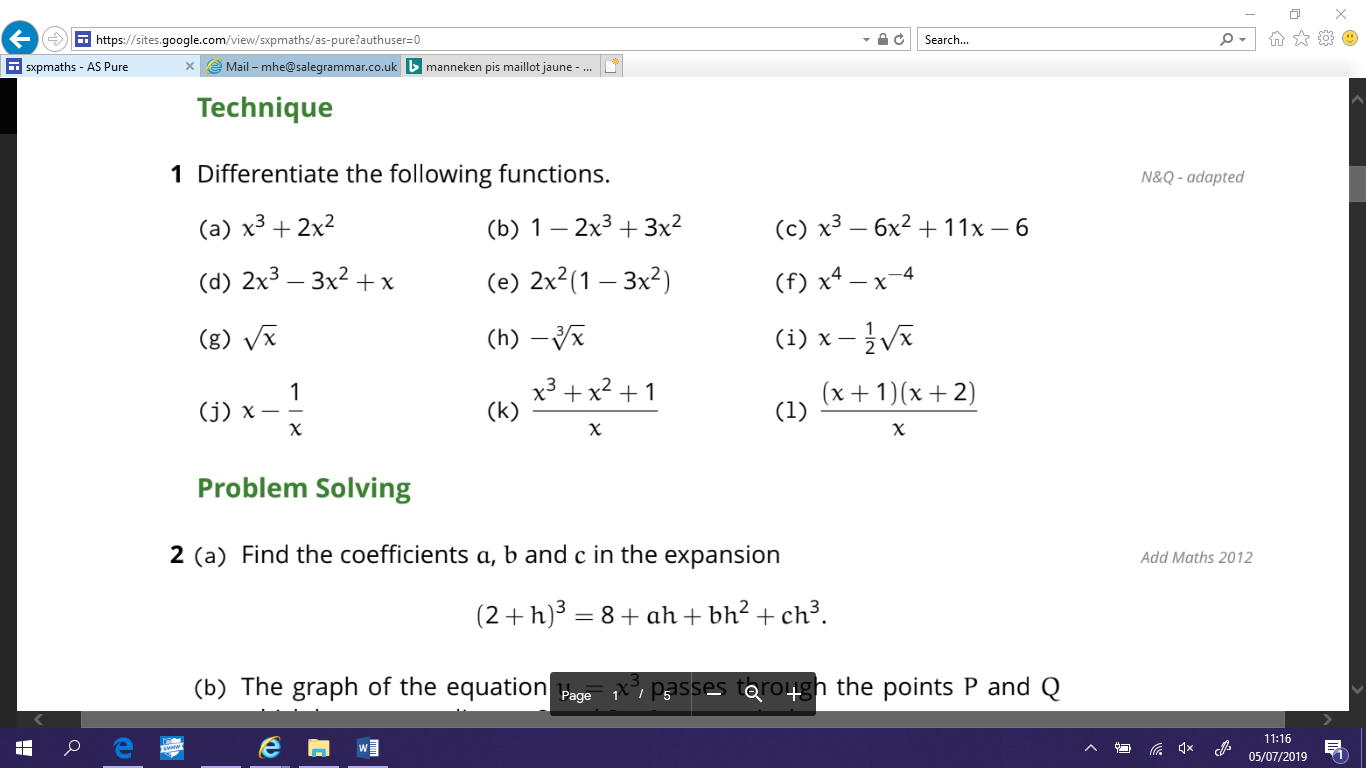
**Exam Questions**

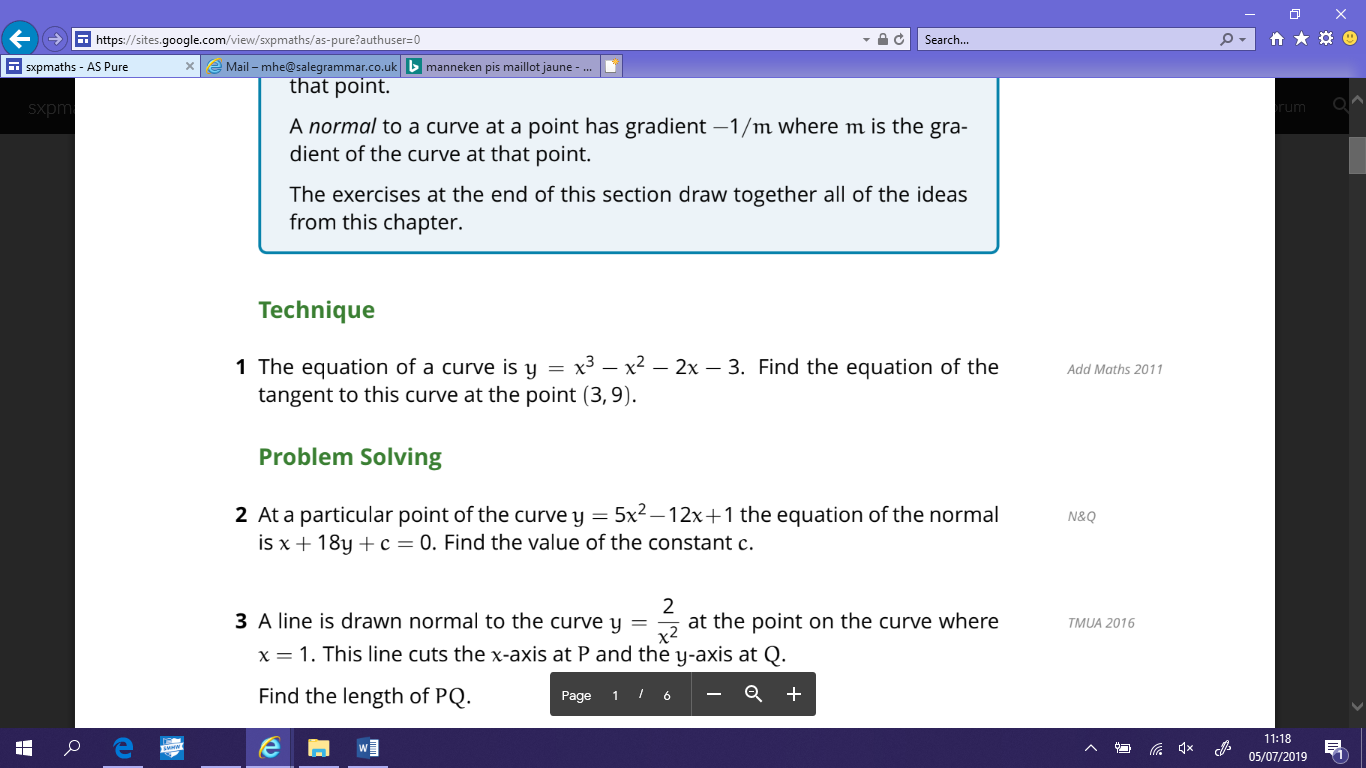
**1)**

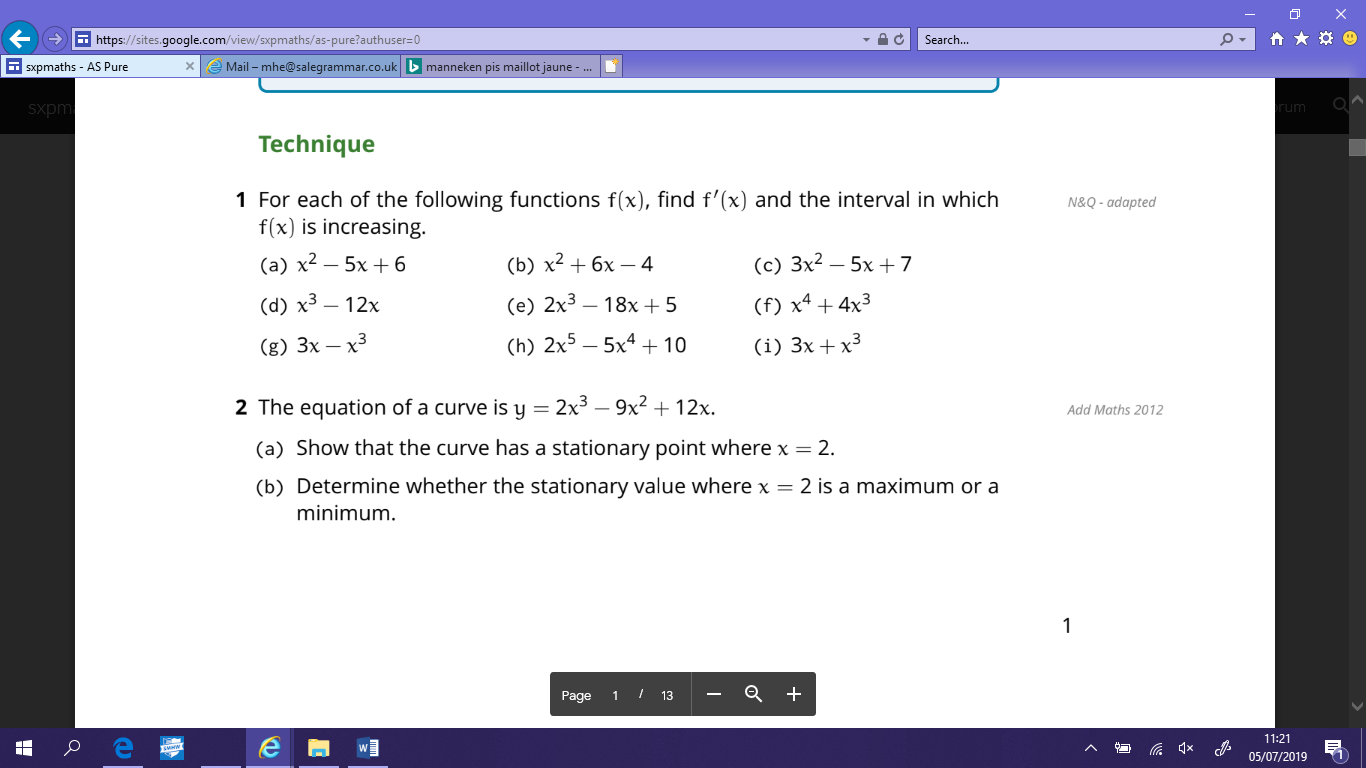
**2)**

**Differentiation**

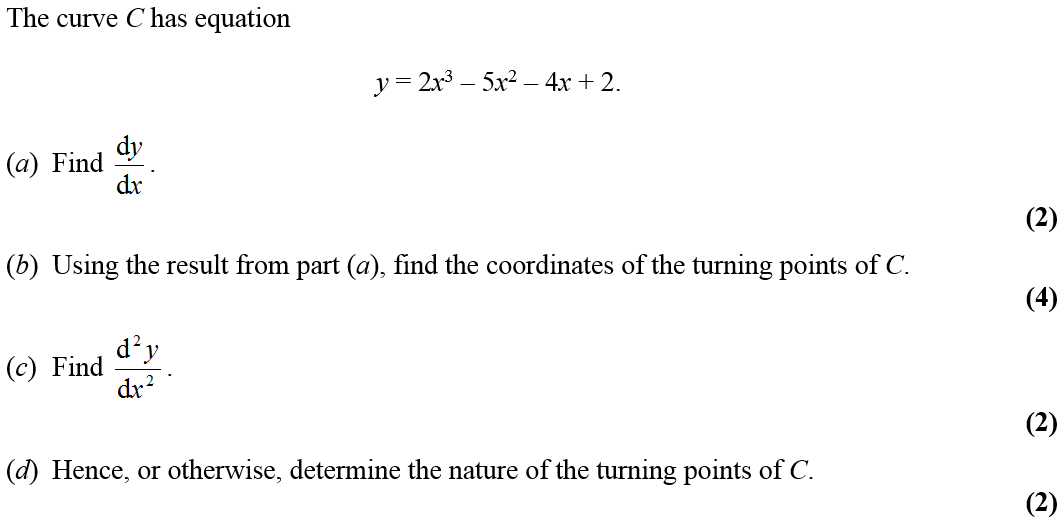
**Practicing the Technique**

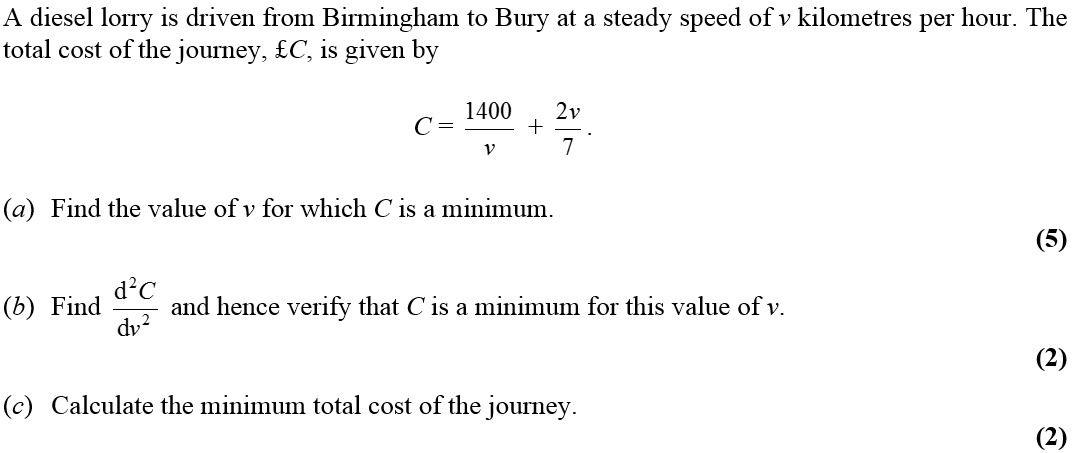


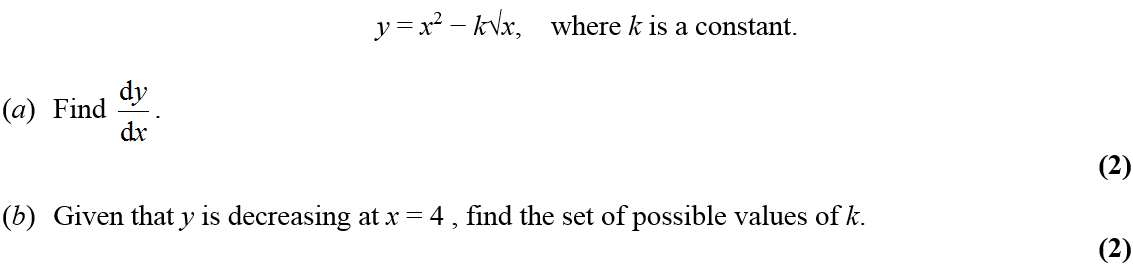
**2)** 

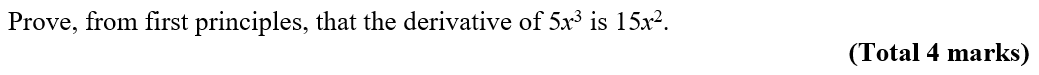
**3)**

**Exam Questions**

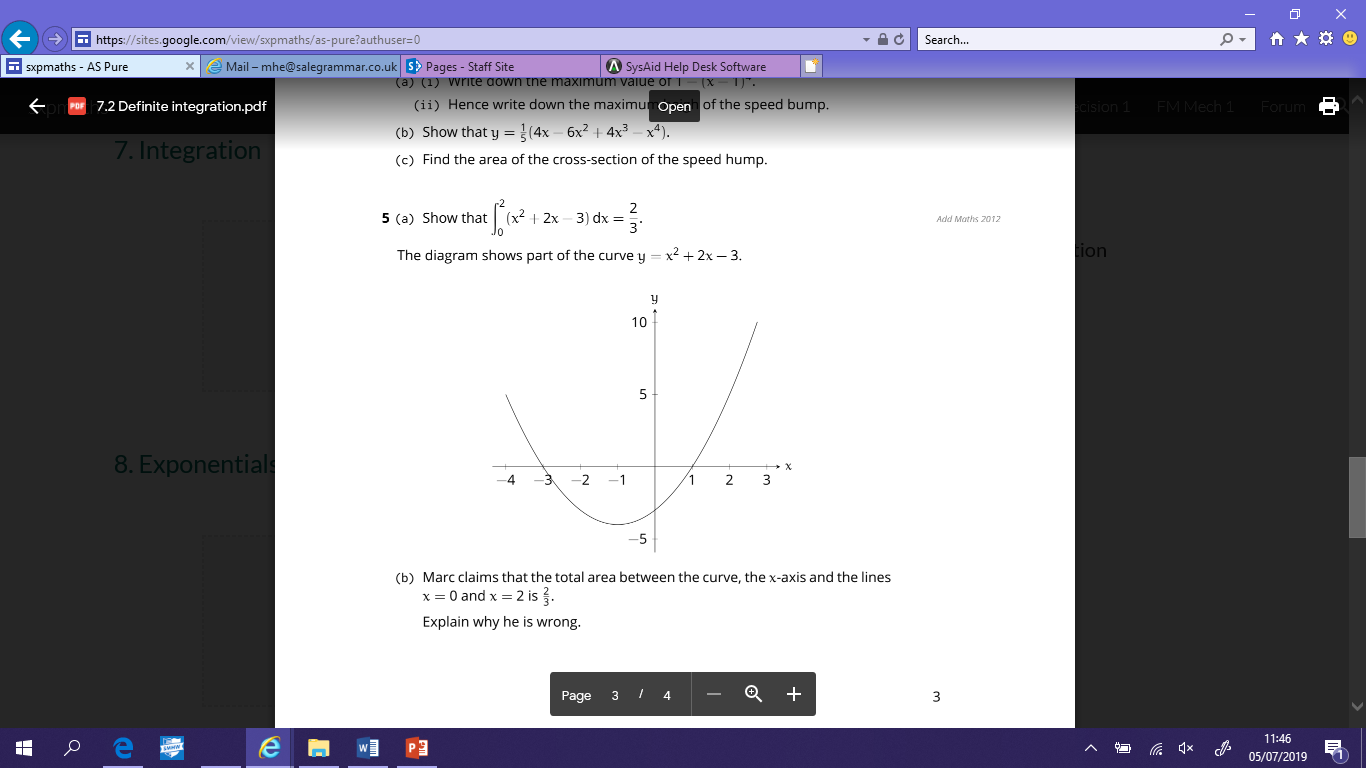
**1)**

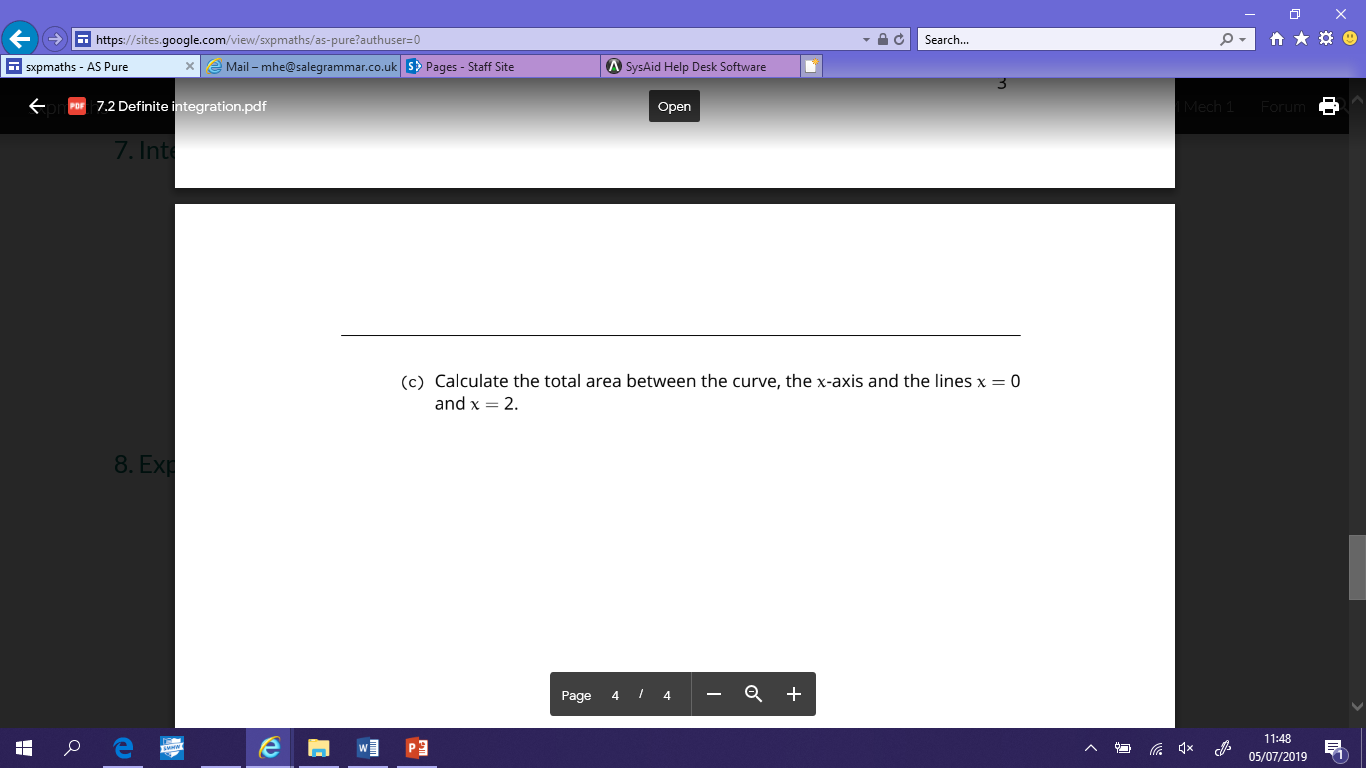
**2)**

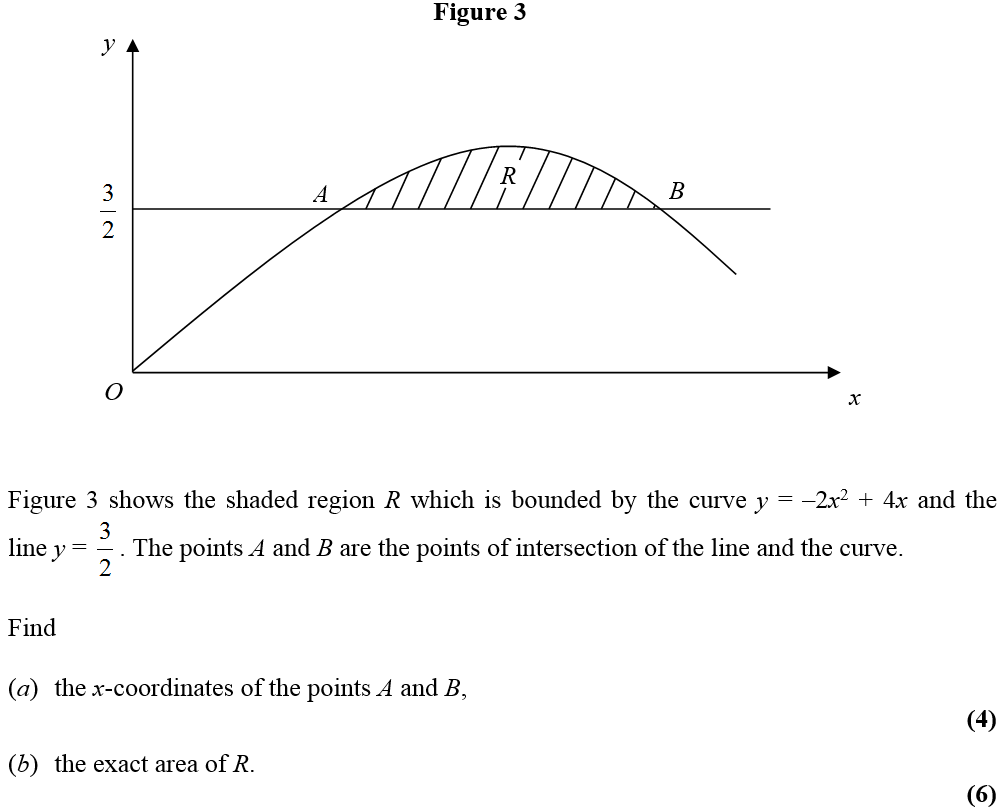
**3)**

**4)**

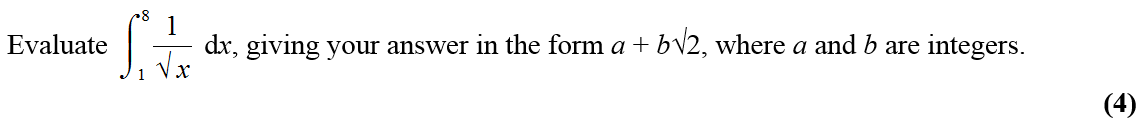
**Integration**

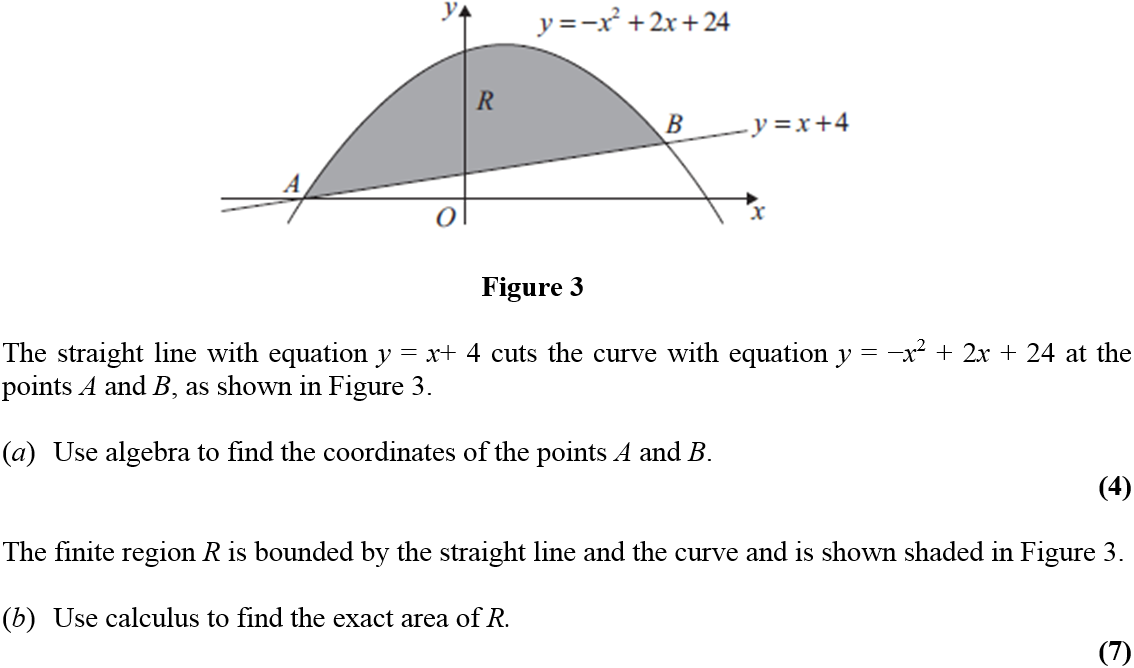
**Practicing the Technique**



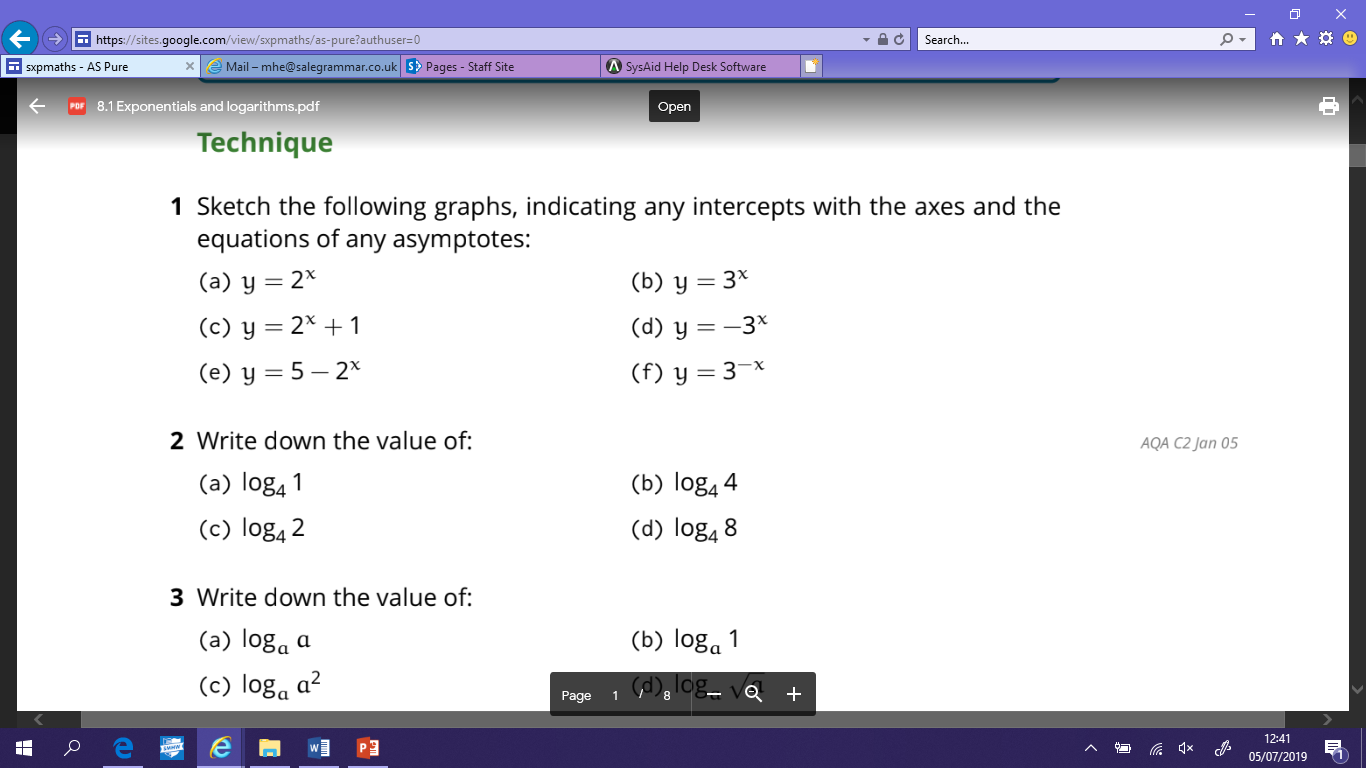
**Exam Questions**

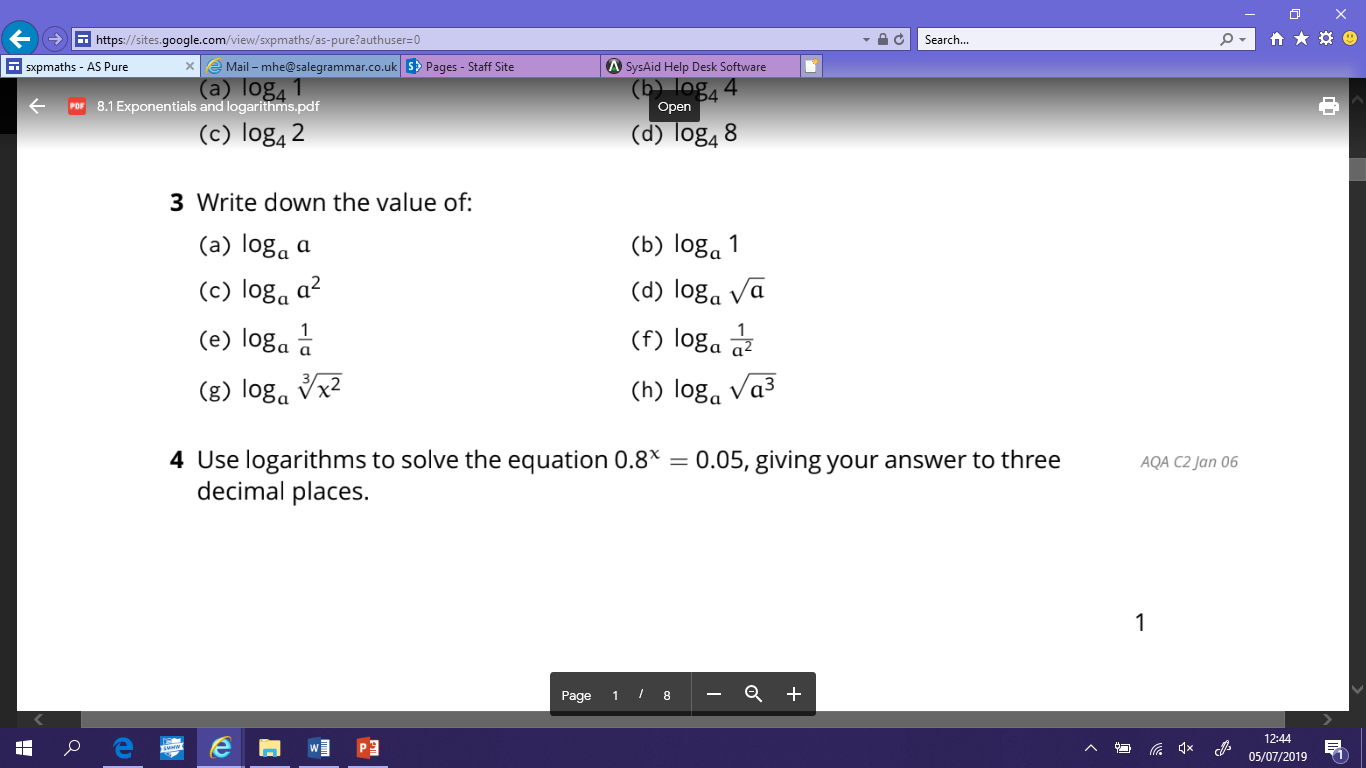
**1)**

**2)**

**3)**

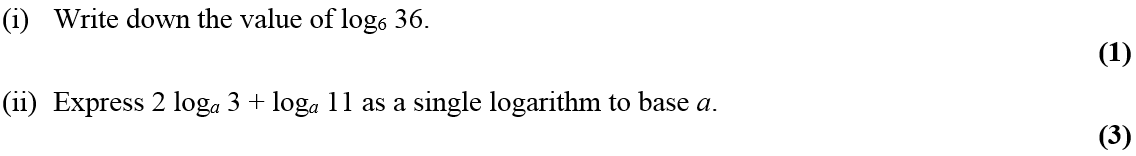
**Exponentials and Logarithms**

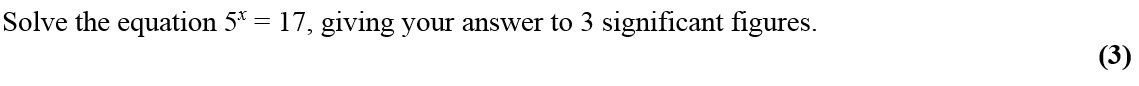
**Practicing the Technique**

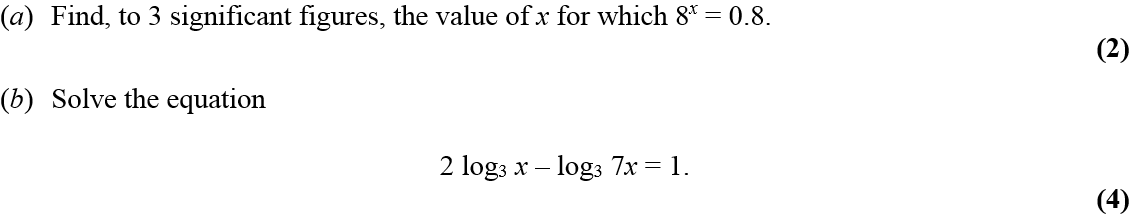


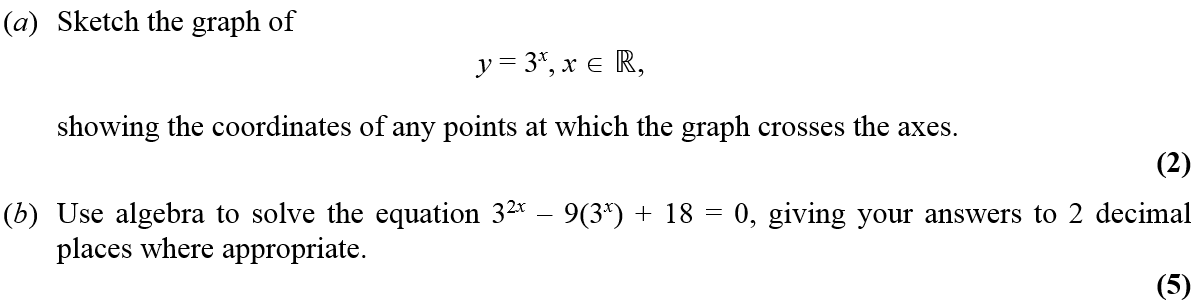
**2)**

**Exam Questions**

**1)**

**2)**

**3)**

**4)**