Name:………………………………………………………………………..

Total Marks:………………………………………………………………………..

GCSE (9-1) Grade 8/9 Quadratic Simultaneous Equations

Instructions

• Use black ink or ball-point pen.
• Fill in the boxes at the top of this page with your name.
• Answer all questions. Answer the questions in the spaces provided
  – there may be more space than you need.
• Show all your working out

Information

• The total mark for this paper is 90.
• The marks for each question are shown in brackets.
  – use this as a guide as to how much time to spend on each question.
• Questions labelled with an asterisk (*) are ones where the quality of your written communication will be assessed

Advice

• Read each question carefully before you start to answer it
• Attempt every question
• Check your answers if you have time at the end
1. Solve algebraically the simultaneous equations

\[ y = x^2 \]
\[ y = 2x + 15 \]

\[ x = \ldots \ldots \ldots, \quad y = \ldots \ldots \ldots \]
\[ x = \ldots \ldots \ldots, \quad y = \ldots \ldots \ldots \]

(Total 5 marks)
2. Solve algebraically the simultaneous equations

\[ y = x^2 \]

\[ y = 7x - 10 \]

\[ x = \ldots \ldots \ldots \ldots \ldots , y = \ldots \ldots \ldots \ldots \ldots \]

\[ x = \ldots \ldots \ldots \ldots \ldots , y = \ldots \ldots \ldots \ldots \ldots \]

(Total 5 marks)
3. Solve algebraically the simultaneous equations

\[ y = 2x^2 \]
\[ y = 20 - 3x \]

\[ x = \ldots \ldots \ldots, \; y = \ldots \ldots \ldots \]

\[ x = \ldots \ldots \ldots, \; y = \ldots \ldots \ldots \]

(Total 5 marks)
4. Solve algebraically the simultaneous equations

\[ y = 3x - 1 \]

\[ x^2 + y^2 = 5 \]

\[ x = \ldots \ldots \ldots \ldots \ldots \ldots \]
\[ y = \ldots \ldots \ldots \ldots \ldots \ldots \]

\[ x = \ldots \ldots \ldots \ldots \ldots \ldots \]
\[ y = \ldots \ldots \ldots \ldots \ldots \ldots \]

(Total 5 marks)
5. Solve algebraically the simultaneous equations

\[ x^2 + y^2 = 20 \]

\[ y = 10 - 2x \]

\[ x = \ldots \ldots \ldots , \ y = \ldots \ldots \ldots \]

\[ x = \ldots \ldots \ldots , \ y = \ldots \ldots \ldots \]

(Total 5 marks)
6. Solve algebraically the simultaneous equations

\[ y = 3x + 2 \]

\[ x^2 + y^2 = 20 \]

\[ x = \ldots, \quad y = \ldots \]

\[ x = \ldots, \quad y = \ldots \]

(Total 5 marks)
7. Solve algebraically the simultaneous equations

\[ 2x + y = 6 \]
\[ x^2 + y^2 = 20 \]

\[ x = \ldots \ldots \ldots, \ y = \ldots \ldots \ldots \]

\[ x = \ldots \ldots \ldots, \ y = \ldots \ldots \ldots \]

(Total 7 marks)
8. Solve algebraically the simultaneous equations

\[ 2x - y = 7 \]
\[ x^2 + y^2 = 34 \]

\[ x = \ldots \ldots \ldots, \quad y = \ldots \ldots \ldots \]

\[ x = \ldots \ldots \ldots, \quad y = \ldots \ldots \ldots \]

(Total 7 marks)
9. Solve algebraically the simultaneous equations

\[ y = 5x - 1 \]
\[ y = (x + 1)^2 \]

\[ x = \ldots \ldots , \ y = \ldots \ldots \]
\[ x = \ldots \ldots , \ y = \ldots \ldots \]

(Total 6 marks)
10. Solve algebraically the simultaneous equations

\[ xy = 12 \]
\[ y - 3x = -9 \]

\[ x = \ldots, \quad y = \ldots \]
\[ x = \ldots, \quad y = \ldots \]

(Total 7 marks)
11. Solve algebraically the simultaneous equations

\[ xy = 9 \]

\[ y - 3x = 6 \]

\[ x = \ldots \ldots \ldots, \ y = \ldots \ldots \ldots \]

\[ x = \ldots \ldots \ldots, \ y = \ldots \ldots \ldots \]

(Total 7 marks)
12. Solve algebraically the simultaneous equations

\[ xy = 7 \]
\[ y - 2x = 5 \]

\[ x = \ldots \ldots \ldots, \quad y = \ldots \ldots \ldots \]

\[ x = \ldots \ldots \ldots, \quad y = \ldots \ldots \ldots \]

(Total 7 marks)
13. Solve algebraically the simultaneous equations

\[ x^2 + y^2 = 25 \]
\[ y - 2x = 5 \]

\[ x = \ldots, y = \ldots \]
\[ x = \ldots, y = \ldots \]

(Total 7 marks)
14. Solve algebraically the simultaneous equations

\[ y = 3x^2 + 7x + 9 \]

\[ y = 4x + 15 \]

\[ x = \ldots, \quad y = \ldots \]

\[ x = \ldots, \quad y = \ldots \]

(Total 5 marks)
15. Solve algebraically the simultaneous equations

\[3y^2 + 4x^2 = 16\]
\[y - 2x = -4\]

\[x = \ldots \ldots \ldots , y = \ldots \ldots \ldots \]

\[x = \ldots \ldots \ldots , y = \ldots \ldots \ldots \]

(Total 7 marks)