Year 9 Mathematics 2018

Expanding and Factorising Quadratics

Skills Test

Name:_____ Teacher:_____ Result: $/32$

- **NO** calculators allowed
- **NO** summary sheets allowed
- **Time allowed: 40mins**

This skills test will cover topics relating to the expansion and factorisation of quadratics. Questions will be based on those covered in Chapters 3.6, 3.7 and all of chapter 16.

Question 1 Expand and simplify each of the following expressions:

a) $(x-5)(x+5)$

b) $(x+2)(x+2)$

c) $(2x-1)(2x+1)-3x$

d) $(x+3)(7x-4)-(x-2)^2$

$(1+1+2+3=7\ marks)$

Question 2 Factorise each of the following expressions:

a) x^2-36

b) $9x^2-25$

c) $x^2-7x+12$

d) $3x^2+6x-45$

$(1+2+1+2=\ 6\ marks)$

Question 3 Simplify the following fractions:

a) $\frac{48}{y-3} \times \frac{y-3}{16}$

b) $\frac{15a+3}{a^2+a-6} \div \frac{10a+2}{3a-6}$

$(2 + 3 = 5\ marks)$

Question 4 Solve each of the following equations for x.

a) $10x^2 - 40 = 0$

b) $(4x - 5)(3 - x) = 0$

c) $x^2 + 16x = 0$

d) $x^2 - 11x - 60 = 0$

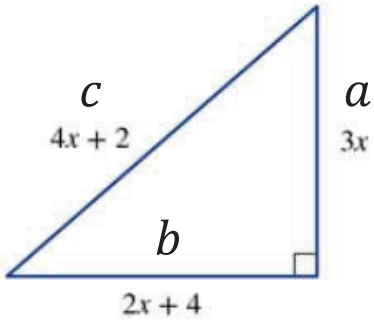
$(2 + 2 + 2 + 2 = 8\ marks)$

Question 5 The length of a rectangular window is $20cm$ longer than the width. If the area is $1500\ cm^2$ find the dimensions of the window.

(3 *marks*)

Question 6 Find the length of each of the sides on the right-angled triangle shown below.

Hint: Use Pythagoras $c^2 = a^2 + b^2$



(3 *marks*)

End of test