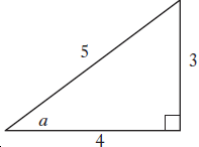


**200 Exam Questions & Answers**

<p><b>61</b> Show that <math>x = 1</math> is a root of <math>x^3 + 8x^2 + 11x - 20 = 0</math>. Hence factorise <math>x^3 + 8x^2 + 11x - 20</math> fully.</p>	
<p><b>62</b> The roots of the equation <math>kx^2 - 3x + 2 = 0</math> are equal. Calculate the value of <math>k</math>.</p>	
<p><b>63</b> Evaluate <math>\log_2 \frac{1}{16}</math>.</p>	
<p><b>64</b> Solve the equation <math>3\cos 2x + \cos x = -1</math> in the interval <math>0 \leq x \leq 360</math>.</p>	
<p><b>65</b> The diagram shows a right-angled triangle with sides and angles marked. What is the value of <math>\cos 2a</math>?</p>	
<p><b>66</b> <math>A = 2\pi r^2 + 6\pi r</math>. What is the rate of change of <math>A</math> with respect to <math>r</math> when <math>r = 2</math>?</p>	
<p><b>67</b> Find the equation of the tangent to the curve <math>y = x^3 - 3x^2 + 2x</math> at the point where <math>x = 1</math>.</p>	
<p><b>68</b> Find <math>\int \frac{1}{3x^4} dx</math>, where <math>x \neq 0</math>.</p>	
<p><b>69</b> Evaluate <math>\int_0^{\frac{\pi}{2}} \sin 2x + \cos 2x dx</math>.</p>	
<p><b>70</b> Write <math>3\cos x^\circ + 4\sin x^\circ</math> in the form <math>k\cos(x + a)</math> for <math>k &gt; 0</math> and <math>0 \leq x \leq 360</math></p>	