Name: _____

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1. Express $\dfrac{3-\sqrt{5}}{1+\sqrt{5}}$ in the form $a+b\sqrt{5}$, where a and b are integers to be found

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2. Evaluate $\displaystyle\int_{1}^{4}(2x+\sqrt{x})\,dx$

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3. $f(x)=x^{3}-4x^{2}+x+6$

(a) Show that $(x-2)$ is a factor of $f(x)$

(b) Solve $f(x)=0$

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4. The line l_1 passes through the points $A(3,2)$ and $B(1,5)$. The line l_2 is perpendicular to l_1 and passes through the point $(3,6)$.

(a) Find the equation of l_2 in the form $y=mx+c$

(b) Find the coordinates of the points where l_2 crosses the coordinate axes.