7(a)	$[\mathrm{f}(x) = -\frac{3}{4}(x^2 - 8x + 15)]$
	$-\frac{3}{4}\int_{4.5}^{5}(x^2 - 8x + 15)\,\mathrm{d}x$
	$= -\frac{3}{4}\left[\frac{x^3}{3} - 4x^2 + 15x\right]_{4.5}^{5}$
	$-\frac{3}{4}\left[\frac{125}{3} - 100 + 75 - (\frac{4.5^3}{3} - 4\times4.5^2 + 15\times4.5)\right]$
	$= \frac{5}{32}$ or 0.15625 or 0.156 (3 sf)
7(b)	Median = 4
7(c)	$1 - 2 \times$ '$\frac{5}{32}$' or $2(0.5 -$ '$\frac{5}{32}$'$)$
	$\frac{11}{16}$ or 0.6875 or 0.687 or 0.688 (3 sf)

5(a)	$k\int_0^2 (2x^2 - x^3)\,\mathrm{d}x = 1$
	$k\left[\frac{2x^3}{3} - \frac{x^4}{4}\right]_0^2 = 1$
	$k \times \frac{4}{3} = 1$ $k = \frac{3}{4}$
5(b)(i)	0.5
5(b)(ii)	$\mathrm{E}(X) = \frac{3}{4}\int_0^2 (2x^3 - x^4)\,\mathrm{d}x$
	$= \frac{3}{4}\left[\frac{2x^4}{4} - \frac{x^5}{5}\right]_0^2 = \frac{6}{5}$
	$\mathrm{P}(X < \mathrm{E}(X)) = \frac{3}{4}\int_0^{'1.2'} (2x^2 - x^3)\,\mathrm{d}x$
	$= \frac{3}{4}\left[\frac{2x^3}{3} - \frac{x^4}{4}\right]_0^{'1.2'} = \frac{594}{1250}$ or 297/625 or 0.4752
	$\mathrm{P}(\mathrm{E}(X) \leqslant X \leqslant m) = 0.5 -$ '0.4752'
	= 0.0248 or 31/1250

7(a)	$\int_0^{\frac{1}{2}}(1+\cos\pi x)\,dx$
	$=\left[x+\frac{\sin\pi x}{\pi}\right]_0^{\frac{1}{2}}$
	$=\frac{1}{2}+\frac{\sin\frac{\pi}{2}}{\pi}=\frac{1}{2}+\frac{1}{\pi}$
7(b)	$\int_0^1(x+x\cos\pi x)\,dx$
	$=\left[\frac{x^2}{2}+x\times\frac{\sin\pi x}{\pi}-\int\frac{\sin\pi x}{\pi}dx\right]_0^1$
	$=\left[\frac{x^2}{2}+x\times\frac{\sin\pi x}{\pi}+\frac{\cos\pi x}{\pi^2}\right]_0^1$
	$=\frac{1}{2}+\frac{\sin\pi}{\pi}+\frac{\cos\pi}{\pi^2}-\frac{\cos 0}{\pi^2}$
	$=\frac{1}{2}-\frac{2}{\pi^2}$