1. Intervalo de confianza para la media, si la media muestral es: 200.8, la desviación típica: 15, tamaño de la muestra: 25 y el grado de confianza: 90.0 %.

**Sol:** $\alpha = 1 - 0{,}9 = 0{,}1 \to \frac{\alpha}{2} = 0{,}05$

Valor crítico:
$P(Z > z_{\alpha/2}) = 0{,}05 \to P(Z < z_{\alpha/2}) = 0{,}95 \to z_{\alpha/2} = 1{,}6449$
[scale=0.8] = 0.9; = 1.6449; $\bar{0}$.05); [no markers, domain=-5:5, samples=100, axis lines=left, height=5cm, width=12cm, xtick=0,, ytick=, xticklabels = 0, $z_{\frac{\alpha}{2}}$ =,enlargelimits=false, clip=false, axis on top] [fill=cyan!20, draw=none, domain=-:] gauss(0,1) ; [very thick,cyan!50!black] gauss(0,1); [] at (5.2,1.5) ; [-] (+6.5,1)node[right]$--$(+5,6, 0,1);
Error cometido:
$E = z_{\alpha/2} \cdot \frac{\sigma}{\sqrt{n}} \to E = 1{,}6449 \cdot \frac{15}{5{,}0} = 4{,}9347$
Por tanto el intervalo de confianza será:
$(\overline{x} - E, \overline{x} + E) = (200{,}8 - 4{,}9347, 200{,}8 + 4{,}9347) = (195{,}8653, 205{,}7347)$

[scale=0.4] $\bar{}$10; $\underline{}$ 10; å= 1; = $\pm$ 1 ; = $\underline{}$ = ( )/2; [very thick] (0) – (,0); [draw=black, fill=white] (,0) circle (2pt); [draw=black, fill=white] (0.0) circle (2pt); [latex-latex] ( 1.5,0) – ($\underline{+}$ 1.5,0) ; [shift=(0),color=black] (0pt,3pt) – (0pt,-3pt); [shift=(0),color=black] (0pt,0pt) – (0pt,-3pt) node[below] 195,86530000000002; [shift=(,0),color=black] (0pt,3pt) – (0pt,-3pt); [shift=(,0),color=black] (0pt,0pt) – (0pt,-3pt) node[below] 200,8; [shift=($\underline{}$0),color=black] (0pt,3pt) – (0pt,-3pt); [shift=(,0),color=black] (0pt,0pt) – (0pt,-3pt) node[below] 205,7347; [decorate,decoration=brace, thick](,0.2)–(,0.2) node[above, midway] $E = 4{,}9347$;

2. Intervalo de confianza para la media, si la media muestral es: 1053, la desviación típica: 75, tamaño de la muestra: 150 y el grado de confianza: 98.0 %.

**Sol:** $\alpha = 1 - 0{,}98 = 0{,}02 \to \frac{\alpha}{2} = 0{,}01$

Valor crítico:
$P(Z > z_{\alpha/2}) = 0{,}01 \to P(Z < z_{\alpha/2}) = 0{,}99 \to z_{\alpha/2} = 2{,}3263$
[scale=0.8] = 0.98; = 2.3263; $\bar{0}$.01); [no markers, domain=-5:5, samples=100, axis lines=left, height=5cm, width=12cm, xtick=0,, ytick=, xticklabels = 0, $z_{\frac{\alpha}{2}}$ =,enlargelimits=false, clip=false, axis on top] [fill=cyan!20, draw=none, domain=-:] gauss(0,1) ; [very thick,cyan!50!black] gauss(0,1); [] at (5.2,1.5) ; [-] (+6.5,1)node[right]$--$(+5,6, 0,1);
Error cometido:
$E = z_{\alpha/2} \cdot \frac{\sigma}{\sqrt{n}} \to E = 2{,}3263 \cdot \frac{75}{12{,}24744871391589} = 14{,}2456$
Por tanto el intervalo de confianza será:
$(\overline{x} - E, \overline{x} + E) = (1053 - 14{,}2456, 1053 + 14{,}2456) = (1038{,}7544, 1067{,}2456)$

[scale=0.4] ⁻10; = 10; å= 1; = ± 1 ; = - = ( )/2; [very thick] (0) – (,0); [draw=black, fill=white] (,0) circle (2pt); [draw=black, fill=white] (0.0) circle (2pt); [latex-latex] ( 1.5,0) – (± 1.5,0) ; [shift=(0),color=black] (0pt,3pt) – (0pt,-3pt); [shift=(0),color=black] (0pt,0pt) – (0pt,-3pt) node[below] 1038,7544; [shift=(,0),color=black] (0pt,3pt) – (0pt,-3pt); [shift=(,0),color=black] (0pt,0pt) – (0pt,-3pt) node[below] 1053; [shift=(,0),color=black] (0pt,3pt) – (0pt,-3pt); [shift=(,0),color=black] (0pt,0pt) – (0pt,-3pt) node[below] 1067,2456; [decorate,decoration=brace, thick](,0.2)–(,0.2) node[above, midway] $E = 14,2456$;