

### **Question 1**

For the following data find the chi-square distribution where  $\hat{\sigma}^2 = 42.1591$  and  $df = 8$ . Test the hypothesis that  $\sigma^2 = 85$  against  $\sigma^2 \neq 85$  at  $\alpha = 5\%$  level of significance.

Question 2

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For the following data test  $\beta_2 = 0$ .

<b>X</b>	<b>Y</b>
<b>34</b>	<b>120</b>
<b>37</b>	<b>130</b>
<b>39</b>	<b>135</b>
<b>42</b>	<b>138</b>
<b>41</b>	<b>142</b>
<b>45</b>	<b>149</b>
<b>40</b>	<b>155</b>
<b>52</b>	<b>158</b>
<b>50</b>	<b>160</b>
<b>62</b>	<b>169</b>

**Question 3**

financial capital of 30 enterprises (in million US\$)

56	58	60	64	54	52	50	40	57	53
65	50	53	52	66	45	55	54	65	56
55	57	48	63	51	55	44	58	54	60

Are those data follow normal distribution? Using  $\alpha = 0,05$ .