


تمرين 1

انتبه ⚠️ ← تعليق

لنحسب :

$D = \sqrt{31 + \sqrt{21 + \sqrt{9 + \sqrt{49}}}}$ $D = \sqrt{31 + \sqrt{21 + \sqrt{9 + 7}}}$ $D = \sqrt{31 + \sqrt{21 + \sqrt{16}}}$ $D = \sqrt{31 + \sqrt{21 + 4}}$ $D = \sqrt{31 + \sqrt{25}}$ $D = \sqrt{31 + 5}$ $D = \sqrt{36} = 6$	$C = \sqrt{\frac{50}{98}}$ $C = \sqrt{\frac{25}{49}}$ $C = \frac{5}{7}$ <p>نختزل أولا : </p>	$B = \frac{\sqrt{9} + \sqrt{121}}{\sqrt{49}}$ $B = \frac{3 + 11}{7}$ $B = \frac{14}{7}$ $B = 2$	$A = \sqrt{1000000}$ $A = \sqrt{10^6}$ $A = \sqrt{(10^3)^2}$ $A = 10^3$
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نبدأ بتبسيط الأقواس الداخلية : 

تمرين 2

انتبه ⚠️ ← تعليق

لنحسب :

$D = \sqrt{24} + 7\sqrt{6} + 2\sqrt{54}$ $D = \sqrt{4 \times 6} + 7\sqrt{6} + 2\sqrt{9 \times 6}$ $D = 2\sqrt{6} + 7\sqrt{6} + 2 \times 3\sqrt{6}$ $D = 2\sqrt{6} + 7\sqrt{6} + 6\sqrt{6}$ $D = (2 + 7 + 6)\sqrt{6}$ $D = 15\sqrt{6}$	$C = 5\sqrt{27} = 5 \times \sqrt{9 \times 3}$ $C = 5 \times 3\sqrt{3} = 15\sqrt{3}$	$B = \sqrt{363} = \sqrt{121 \times 3} = 11\sqrt{3}$	$A = \sqrt{50} = \sqrt{25 \times 2} = 5\sqrt{2}$
$K = (\sqrt{3} - 1)^4$ $K = \left( (\sqrt{3} - 1)^2 \right)^2$ $K = \left( (\sqrt{3})^2 - 2 \times \sqrt{3} \times 1 + 1^2 \right)^2$ $K = (3 - 2\sqrt{3} + 1)^2$ $K = (4 - 2\sqrt{3})^2$ $K = 4^2 - 2 \times 4 \times 2\sqrt{3} + (2\sqrt{3})^2$ $K = 16 - 16\sqrt{3} + 4 \times 3$ $K = 16 - 16\sqrt{3} + 12$ $K = 28 - 16\sqrt{3}$	$G = \sqrt{242} \times \sqrt{128}$ $G = \sqrt{121 \times 2} \times \sqrt{64 \times 2}$ $G = 11\sqrt{2} \times 8\sqrt{2}$ $G = 88 \times (\sqrt{2})^2$ $G = 88 \times 2$ $G = 176$	$F = \sqrt{5^3 \times 7^5 \times 1000}$ $F = \sqrt{5^2 \times 5 \times 7^4 \times 7 \times 100 \times 10}$ $F = 5 \times 7^2 \times 10 \sqrt{5 \times 7 \times 10}$ $F = 5 \times 49 \times 10 \sqrt{5 \times 7 \times 5 \times 2}$ $F = 5 \times 490 \times 5\sqrt{7 \times 2}$ $F = 12250\sqrt{14}$	$E = \sqrt{3} \times \sqrt{21} \times \sqrt{7}$ $E = \sqrt{3 \times 7} \times \sqrt{21}$ $E = \sqrt{21} \times \sqrt{21}$ $E = (\sqrt{21})^2$ $E = 21$
	$I = (\sqrt{13} - 5)(\sqrt{13} + 5)$ $I = (\sqrt{13})^2 - 5^2$ $I = 13 - 25$ $I = -12$	$L = (\sqrt{3} + 5)(2\sqrt{3} + 1)(1 + \sqrt{3})$ $L = (6 + \sqrt{3} + 10\sqrt{3} + 5)(1 + \sqrt{3})$ $L = (11 + 11\sqrt{3})(1 + \sqrt{3})$ $L = 11 + 11\sqrt{3} + 11\sqrt{3} + 33$ $L = 44 + 22\sqrt{3}$	$H = \sqrt{7} \left( \sqrt{700} + (\sqrt{7})^3 \right)$ $H = \sqrt{7} \left( \sqrt{100 \times 7} + (\sqrt{7})^2 \sqrt{7} \right)$ $H = \sqrt{7} (10\sqrt{7} + 7\sqrt{7})$ $H = \sqrt{7} (17\sqrt{7})$ $H = 17 \times 7$ $H = 119$

بسطنا مباشرة أثناء النشر : 

لنسط :

$B = \sqrt{(\sqrt{5}-1)^2} + \sqrt{(\sqrt{5}-7)^2}$ $B =  \sqrt{5}-1  +  \sqrt{5}-7 $ $B = \sqrt{5}-1+7-\sqrt{5}$ $B = 6$	<p>لدينا <math>\sqrt{5} &gt; 1</math> منه <math>\sqrt{5}-1 &gt; 0</math></p> <p>لدينا <math>\sqrt{5} &lt; 7</math> منه <math>\sqrt{5}-7 &lt; 0</math></p> <p>بالتالي :</p>	$A = \sqrt{(\sqrt{7}-3)^2} =  \sqrt{7}-3 $ <p>ولدينا <math>(\sqrt{7})^2 = 7</math> و <math>3^2 = 9</math> و <math>7 &lt; 9</math></p> <p>منه <math>\sqrt{7} &lt; 3</math> منه <math>\sqrt{7}-3 &lt; 0</math></p> <p>بالتالي <math>A = -(\sqrt{7}-3) = 3-\sqrt{7}</math></p>
<p>لأن <math>\sqrt{2} + \sqrt{6} &gt; 0</math></p> $D = \sqrt{8-2\sqrt{12}} = \sqrt{2+2\sqrt{2} \times \sqrt{6} + 6}$ $D = \sqrt{(\sqrt{2})^2 + 2\sqrt{2} \times \sqrt{6} + (\sqrt{6})^2}$ $D = \sqrt{(\sqrt{2} + \sqrt{6})^2}$ $D =  \sqrt{2} + \sqrt{6} $ $D = \sqrt{2} + \sqrt{6}$	$C = \sqrt{3+2\sqrt{2}} = \sqrt{1+2\sqrt{2} + 2}$ $C = \sqrt{1^2 + 2 \times 1 \times \sqrt{2} + (\sqrt{2})^2}$ <p>لأن <math>1 + \sqrt{2} &gt; 0</math></p> $C = \sqrt{(1 + \sqrt{2})^2}$ $C =  1 + \sqrt{2} $ $C = 1 + \sqrt{2}$	

لتبسيط العددين  $C$  و  $D$  يجب كتابة مداخل الجذر مربع على شكل المتطابقة هامة  $(a+b)^2$  أو  $(a-b)^2$

$B = \frac{\sqrt{5}-3}{\sqrt{5}} = \frac{(\sqrt{5}-3) \times \sqrt{5}}{\sqrt{5} \times \sqrt{5}} = \frac{5-3\sqrt{5}}{5}$	$A = \frac{3}{\sqrt{2}-1} = \frac{3 \times (\sqrt{2}+1)}{(\sqrt{2}-1) \times (\sqrt{2}+1)} = \frac{3\sqrt{2}+3}{(\sqrt{2})^2-1^2} = \frac{3\sqrt{2}+3}{2-1} = 3\sqrt{2}+3$
$C = \frac{5}{\sqrt{7}-2} - \frac{2}{\sqrt{7}} = \frac{5(\sqrt{7}+2)}{(\sqrt{7}-2)(\sqrt{7}+2)} - \frac{2\sqrt{7}}{(\sqrt{7})^2} = \frac{5\sqrt{7}+10}{7-4} - \frac{2\sqrt{7}}{7} = \frac{5\sqrt{7}+10}{3} - \frac{2\sqrt{7}}{7} = \frac{7(5\sqrt{7}+10)}{21} - \frac{3(2\sqrt{7})}{21} = \frac{35\sqrt{7}+70-6\sqrt{7}}{21} = \frac{29\sqrt{7}+70}{21}$	
$D = \frac{3+\sqrt{5}}{7+\sqrt{5}} - \frac{3-\sqrt{5}}{7-\sqrt{5}} = \frac{(3+\sqrt{5})(7-\sqrt{5})}{(7+\sqrt{5})(7-\sqrt{5})} - \frac{(3-\sqrt{5})(7+\sqrt{5})}{(7-\sqrt{5})(7+\sqrt{5})} = \frac{21-3\sqrt{5}+7\sqrt{5}-5}{49-5} - \frac{21+3\sqrt{5}-7\sqrt{5}-5}{49-5}$	
$D = \frac{21-3\sqrt{5}+7\sqrt{5}-5-21-3\sqrt{5}+7\sqrt{5}+5}{44} = \frac{(-3-3+7+7)\sqrt{5}}{44} = \frac{8\sqrt{5}}{44} = \frac{2\sqrt{5}}{11}$	