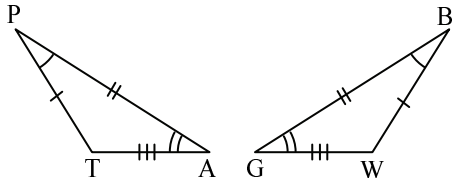
15.12.14

דף עבודה

חפיפת משולשים

(1) שני המשולשים בסרטוט חופפים.



השלימו לקבלת טענה נכונה.

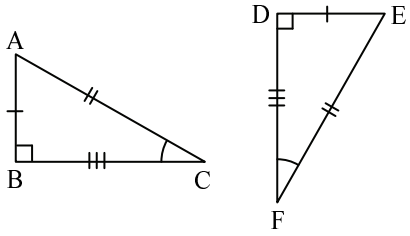
(א) $\Delta PTA \cong \Delta$_____ בהתאמה.

(ב) $\sphericalangle P = \sphericalangle$____ $PT =$ ____

$\sphericalangle T = \sphericalangle$____ $TA =$ ____

$\sphericalangle A = \sphericalangle$____ $PA =$ ____

(2) שני המשולשים בסרטוט חופפים.



השלימו לקבלת טענה נכונה.

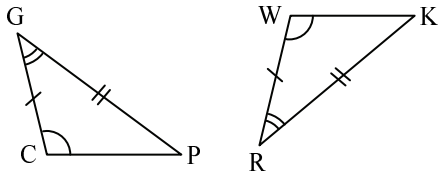
(א) $\Delta ABC \cong \Delta$_____ בהתאמה.

(ב) $\sphericalangle A = \sphericalangle$____ $AB =$ ____

$\sphericalangle B = \sphericalangle$____ $BC =$ ____

$\sphericalangle C = \sphericalangle$____ $AC =$ ____

(3) שני המשולשים בסרטוט חופפים.



השלימו לקבלת טענה נכונה.

(א) $\Delta GCP \cong \Delta$_____ בהתאמה.

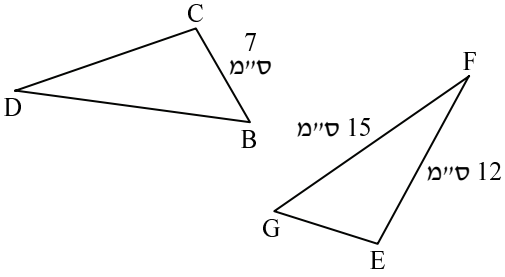
(ב) $\sphericalangle G = \sphericalangle$____ $GC =$ ____

$\sphericalangle C = \sphericalangle$____ $CP =$ ____

$\sphericalangle P = \sphericalangle$____ $GP =$ ____

(4) שני המשולשים בסרטוט חופפים.

$\Delta BDC \cong \Delta GFE$ בהתאמה.



השלימו לקבלת טענה נכונה.

$BD =$ ____ = ____ ס"מ

$GE =$ ____ = ____ ס"מ

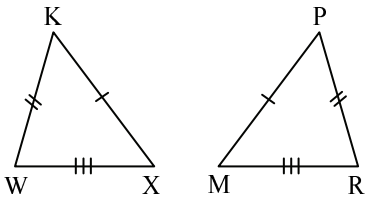
$DC =$ ____ = ____ ס"מ

$\sphericalangle B = \sphericalangle$____

$\sphericalangle C = \sphericalangle$____

$\sphericalangle D = \sphericalangle$____

(5) שני המשולשים בסרטוט חופפים.



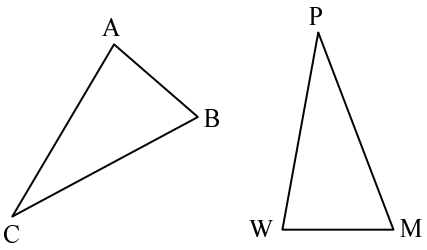
השלימו:

(א) $\Delta KWX \cong \Delta$_____ בהתאמה.

(ב) $\measuredangle X = \measuredangle$____

$\measuredangle K = \measuredangle$____

(6) נתון: $\Delta ACB \cong \Delta WPM$.



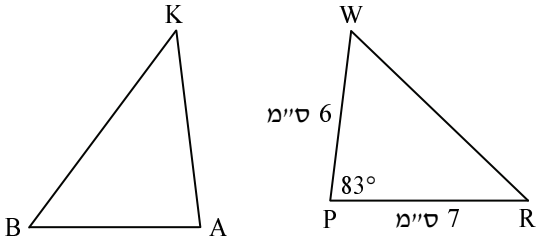
השלימו:

$\measuredangle A = \measuredangle$____ $AB =$ ____

$\measuredangle B = \measuredangle$____ $BC =$ ____

$\measuredangle C = \measuredangle$____ $AC =$ ____

(7) בסרטוט $\Delta KBA \cong \Delta RWP$.



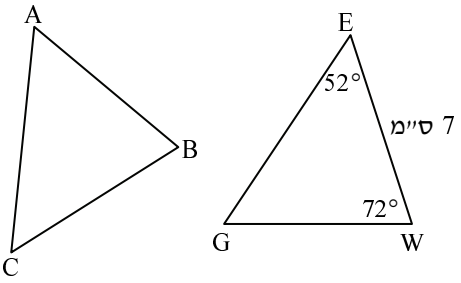
השלימו:

$KA =$ ____ = ____ ס"מ

$BA =$ ____ = ____ ס"מ

$\measuredangle P = \measuredangle$____ = ____°

(8) בסרטוט $\Delta ACB \cong \Delta GEW$.



(א) השלימו לקבלת טענה נכונה:

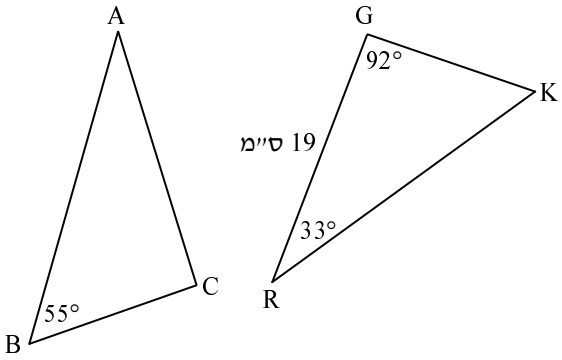
$BC =$ ____ = ____ ס"מ

$\measuredangle C = \measuredangle$____ = ____°

$\measuredangle B = \measuredangle$____ = ____°

(ב) רשמו 3 שוויונות נוספים הנובעים מהחפיפה.

(9) בסרטוט $\Delta ACB \cong \Delta RGK$.



השלימו לקבלת טענה נכונה:

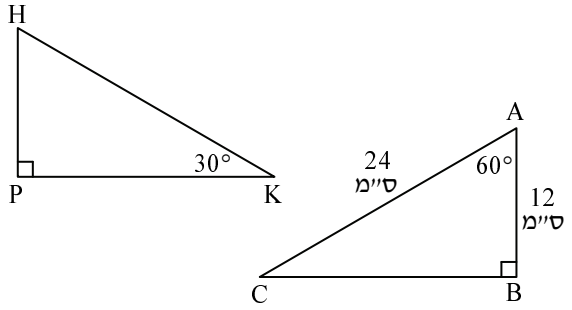
$GR =$ ____ = ____ ס"מ

$\measuredangle G = \measuredangle$____ = ____°

$\measuredangle R = \measuredangle$____ = ____°

$\measuredangle K = \measuredangle$____ = ____°

(10) בסרטוט הנתון, $\Delta HPK \cong \Delta ABC$.



השלימו:

$AB =$ ____ = ____ ס"מ

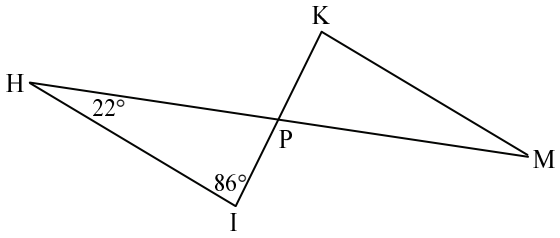
$AC =$ ____ = ____ ס"מ

$\measuredangle A = \measuredangle$ ____ = ____°

$\measuredangle B = \measuredangle$ ____ = ____°

$\measuredangle C = \measuredangle$ ____ = ____°

(11) בסרטוט: $\Delta HIP \cong \Delta MKP$.



(א) השלימו:

$\measuredangle H = \measuredangle$ ____ = ____°

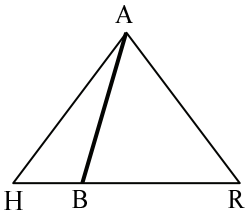
$\measuredangle I = \measuredangle$ ____ = ____°

$\measuredangle HPI = \measuredangle$ ____ = ____° . נמקו תשובתכם.

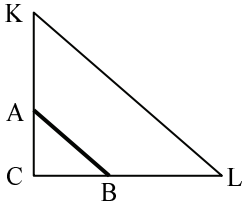
(ב) רשמו שלושה שוויונות נוספים הנובעים מהחפיפה.

(12) באילו מהסרטוטים הבאים הקטע AB הוא צלע משותפת לשני משולשים ?

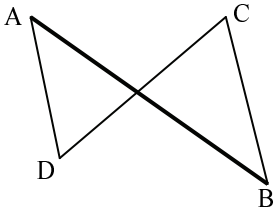
(א)



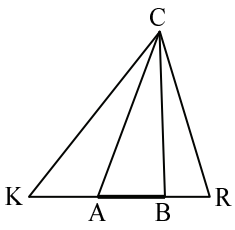
(ב)



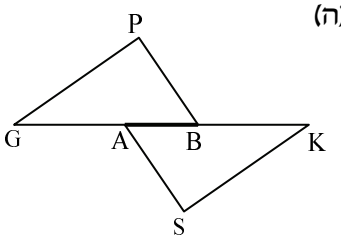
(ג)



(ד)



(ה)



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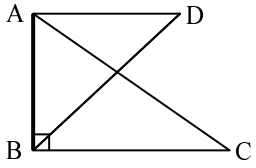
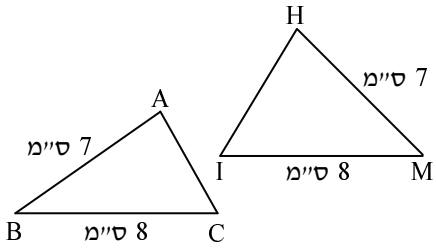


(13) בכל אחד מהסרטוטים הבאים:

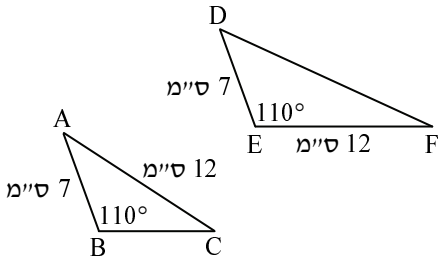
(*i*) ציינו האם המשולשים חופפים לפי משפט החפיפה **צ.ז.צ.**

(*ii*) אם המשולשים חופפים, רשמו את החפיפה בהתאמה.

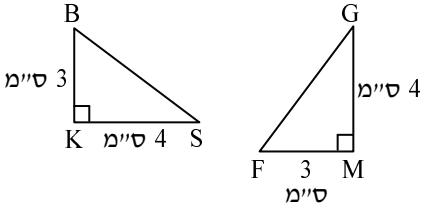
(א)



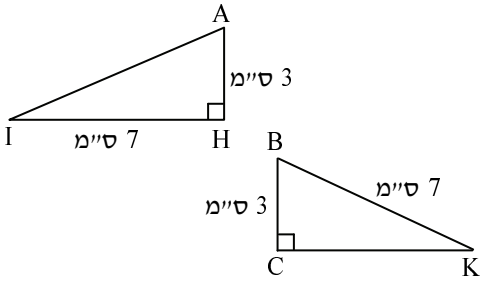
(ב)



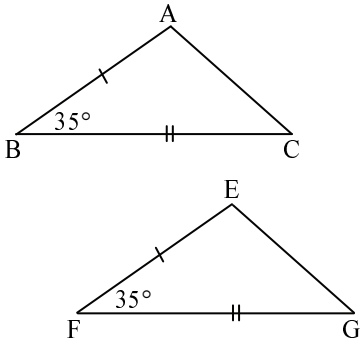
(ג)



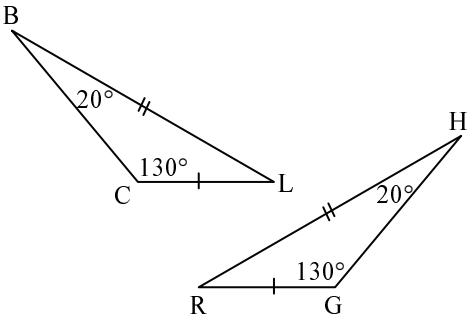
(ד)



(ה)



★ (ו)

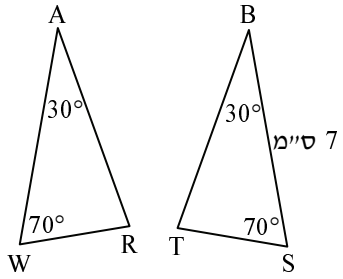


(14) בכל אחד מהסרטוטים הבאים:

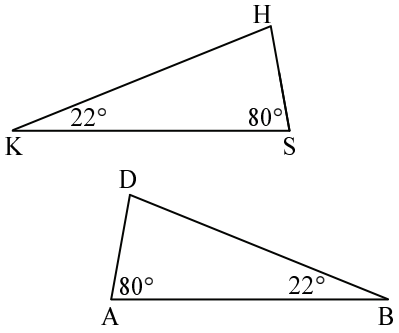
(*i*) קבעו אם המשולשים חופפים לפי משפט החפיפה **ז.צ.ז.**

(*ii*) בסעיפים בהם קיימת חפיפה, רשמו אותה בהתאמה.

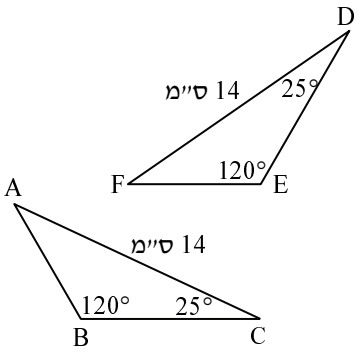
(א)



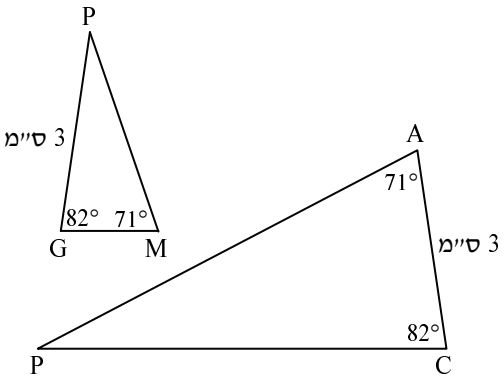
(ב)



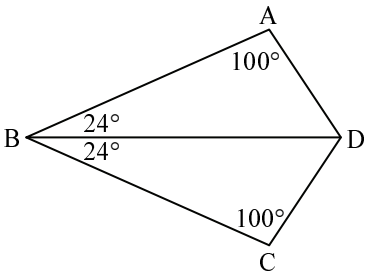
(ג)



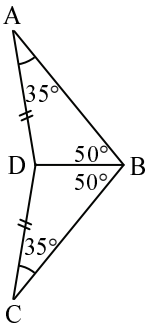
(ד)



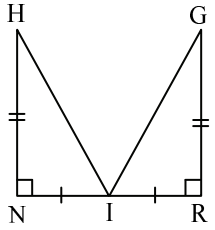
(ה)



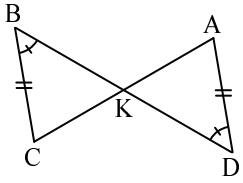
(ו)



(ז)



(ח)

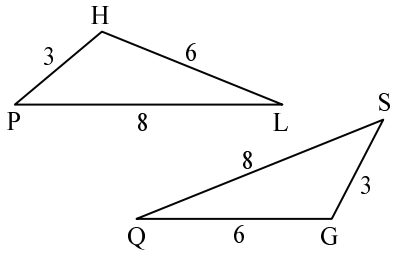


(15) בכל אחד מהסרטוטים הבאים:

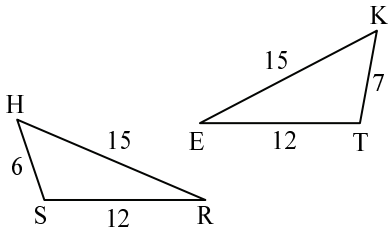
(*i*) קבעו אם המשולשים חופפים לפי משפט החפיפה צ.צ.צ.

(*ii*) בסעיפים בהם קיימת חפיפה, רשמו אותה בהתאמה.

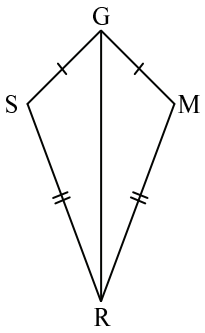
(א)



(ב)



(ג)



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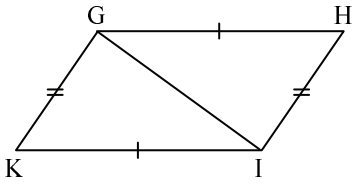
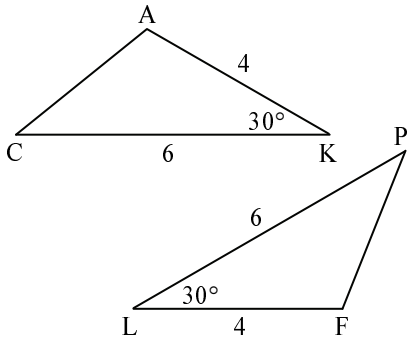
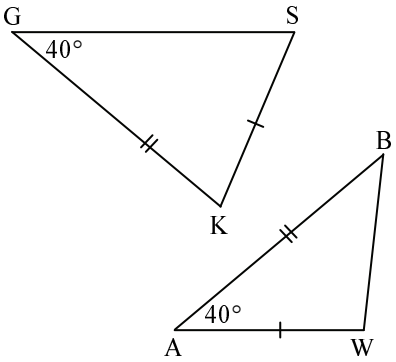


(ה)



(ו)

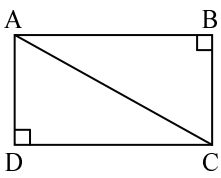


(16) לגבי כל אחד מהסעיפים הבאים:

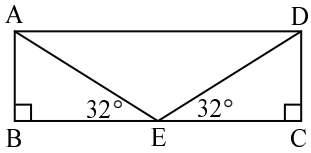
(*i*) קבעו לפי איזה משפט חפיפה המשולשים חופפים. (אם הם חופפים)

(*ii*) רשמו את החפיפה בהתאמה.

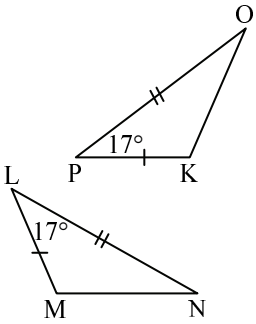
(א)



(ב)



(ג)



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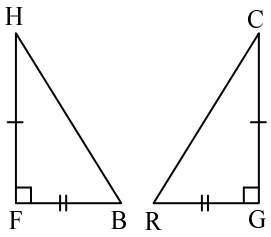

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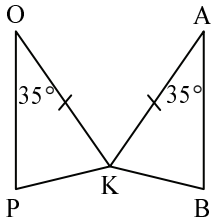

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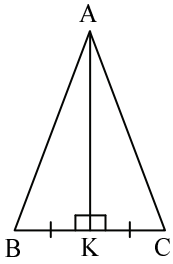
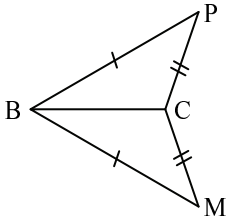
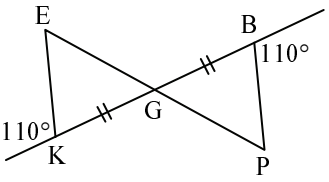


(ז)



(ח)



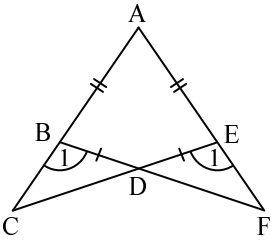
(17) נתון:

$AB = AE =$ 5 ס"מ

$AC = AF =$ 14 ס"מ

$\measuredangle B_1 = \measuredangle E_1$

הוכיחו כי $\Delta CBD \cong \Delta FED$.

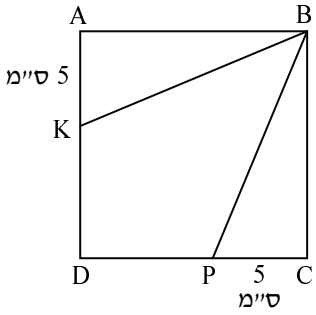


(18) $ABCD$ הוא ריבוע.

$AK = PC =$ 5 ס"מ

הוכיחו כי $\Delta ABK \cong \Delta CBP$.

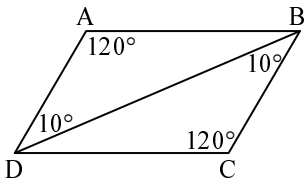
(רשמו: נתון, צ"ל והוכחה מנומקת.)



(19) התבוננו בסרטוט משמאל.

הוכיחו כי $\Delta ADB \cong \Delta CBD$.

(רשמו: נתון, צ"ל והוכחה מנומקת.)



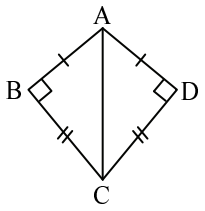
(20) התבוננו בסרטוט משמאל.

(א) הוכיחו כי $\Delta ABC \cong \Delta ADC$.

(רשמו: נתון, צ"ל והוכחה מנומקת.)

(ב) הוכיחו כי $\Delta ABC \cong \Delta ADC$

בדרך נוספת.



(21) התבוננו בסרטוט משמאל.

(א) הוכיחו כי $\Delta EBD \cong \Delta CBA$.

(רשמו: נתון, צ"ל והוכחה מנומקת.)

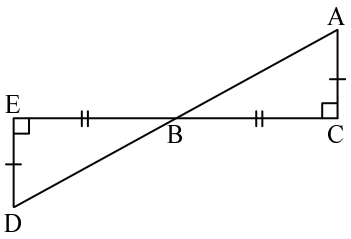
(ב) הוכיחו כי $\Delta EBD \cong \Delta CBA$

בדרך נוספת.

(ג) נתון: $\measuredangle D = 14°$.

חשבו את $\measuredangle ABC$.

הסבירו תשובתכם.



(22) התבוננו בנתונים בסרטוט שלפניכם.

הוכיחו כי $\Delta ABD \cong \Delta EFC$.

(רשמו: נתון, צ"ל והוכחה מנומקת.)

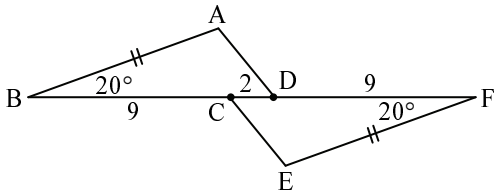
ראו:

$BD = __ + __ = __$

$FC = __ + __ = __$

$\Downarrow$

$BD = __$



בהצלחה!

תשובות סופיות

(1) (א) $\Delta PTA \cong \Delta \mathbf{BWG}$

(ב) $\sphericalangle P = \sphericalangle \mathbf{B}$, $PT = \mathbf{BW}$

$\sphericalangle T = \sphericalangle \mathbf{W}$, $TA = \mathbf{WG}$

$\sphericalangle A = \sphericalangle \mathbf{G}$, $PA = \mathbf{BG}$

(2) (א) $\Delta ABC \cong \Delta \mathbf{EDF}$

(ב) $\sphericalangle A = \sphericalangle \mathbf{E}$, $AB = \mathbf{ED}$

$\sphericalangle B = \sphericalangle \mathbf{D}$, $BC = \mathbf{DF}$

$\sphericalangle C = \sphericalangle \mathbf{F}$, $AC = \mathbf{EF}$

(3) (א) $\Delta GCP \cong \Delta \mathbf{RWK}$

(ב) $\sphericalangle G = \sphericalangle \mathbf{R}$, $GC = \mathbf{RW}$

$\sphericalangle C = \sphericalangle \mathbf{W}$, $CP = \mathbf{WK}$

$\sphericalangle P = \sphericalangle \mathbf{K}$, $GP = \mathbf{RK}$

(4) $BD = \mathbf{GF} =$ **15** ס"מ

$GE = \mathbf{BC} =$ **7** ס"מ

$DC = \mathbf{FE} =$ **12** ס"מ

$\sphericalangle B = \sphericalangle \mathbf{G}$

$\sphericalangle C = \sphericalangle \mathbf{E}$

$\sphericalangle D = \sphericalangle \mathbf{F}$

(5) (א) $\Delta KWX \cong \Delta \mathbf{PRM}$

(ב) $\sphericalangle X = \sphericalangle \mathbf{M}$

$\sphericalangle K = \sphericalangle \mathbf{P}$

(6) $AB = \mathbf{WM}$, $\sphericalangle A = \sphericalangle \mathbf{W}$

$BC = \mathbf{MP}$, $\sphericalangle B = \sphericalangle \mathbf{M}$

$AC = \mathbf{WP}$, $\sphericalangle C = \sphericalangle \mathbf{P}$

(7) $KA = \mathbf{RP} =$ **7** ס"מ

$BA = \mathbf{WP} =$ **6** ס"מ

$\sphericalangle P = \sphericalangle \mathbf{A} = \mathbf{83°}$

(8) (א) $BC = \mathbf{WE} =$ **7** ס"מ , $\sphericalangle C = \sphericalangle \mathbf{E} = \mathbf{52°}$, $\sphericalangle B = \sphericalangle \mathbf{W} = \mathbf{72°}$

(ב) $AB = GW$, $AC = GE$, $\sphericalangle A = \sphericalangle G$

(9) $GR = \mathbf{AC} =$ **19** ס"מ

$\sphericalangle G = \sphericalangle \mathbf{C} = \mathbf{92°}$

$\sphericalangle R = \sphericalangle \mathbf{A} = \mathbf{33°}$

$\sphericalangle K = \sphericalangle \mathbf{B} = \mathbf{55°}$

(10) $AB = \mathbf{HP} =$ **12** ס"מ , $AC = \mathbf{HK} =$ **24** ס"מ

$\sphericalangle A = \sphericalangle \mathbf{H} = \mathbf{60°}$, $\sphericalangle B = \sphericalangle \mathbf{P} = \mathbf{90°}$

$\sphericalangle C = \sphericalangle \mathbf{K} = \mathbf{30°}$

(11) (א) $\measuredangle H = \measuredangle \mathbf{M} = \mathbf{22°}$

$\measuredangle I = \measuredangle \mathbf{K} = \mathbf{86°}$

$\measuredangle HPI = \measuredangle \mathbf{MPK} = \mathbf{72°}$

(ב) $HI = MK \ , \ HP = MP \ , \ IP = KP$

(12) (א) ו- (ו).

(13) (א) (*i*) לא.

(ב) (*i*) לא.

(ג) (*i*) כן. (*ii*) $\Delta GMF \cong \Delta SKB$

(ד) (*i*) לא.

(ה) (*i*) כן. (*ii*) $\Delta ABC \cong \Delta EFG$

(ו) (*i*) כן. (*ii*) $\Delta BCL \cong \Delta HGR$

(14) (א) (*i*) לא.

(ב) (*i*) לא.

(ג) (*i*) כן. (*ii*) $\Delta DFE \cong \Delta CAB$

(ד) (*i*) לא.

(ה) (*i*) כן. (*ii*) $\Delta ABD \cong \Delta CBD$

(ו) (*i*) כן. (*ii*) $\Delta ABD \cong \Delta CBD$

(ז) (*i*) כן. (*ii*) $\Delta GRI \cong \Delta HNI$

(ח) (*i*) כן. (*ii*) $\Delta BCK \cong \Delta DAK$

(15) (א) (*i*) כן. (*ii*) $\Delta HPL \cong \Delta GSQ$

(ב) (*i*) לא.

(ג) (*i*) כן. (*ii*) $\Delta GSR \cong \Delta GMR$

(ד) (*i*) כן. (*ii*) $\Delta GKI \cong \Delta IHG$

(ה) (*i*) לא חופף לפי צ.צ.צ. (*ii*) $\Delta AKC \cong \Delta FLP$ לפי צ.ז.צ.

(ו) (*i*) לא.

(16) (א) (*i*) לא.

(ב) (*i*) לא.

(ג) (*i*) כן. לפי משפט החפיפה צ.ז.צ. (*ii*) $\Delta OPK \cong \Delta NLM$

(ד) (*i*) כן. לפי משפט החפיפה צ.ז.צ. (*ii*) $\Delta HFB \cong \Delta CGR$

(ה) (*i*) לא.

(ו) (*i*) כן. לפי משפט החפיפה צ.ז.צ. (*ii*) $\Delta ABK \cong \Delta ACK$

(ז) (*i*) כן. לפי משפט החפיפה צ.צ.צ. (*ii*) $\Delta PBC \cong \Delta MBC$

(ח) (*i*) כן. לפי משפט החפיפה ז.צ.ז. (*ii*) $\Delta EKG \cong \Delta PBG$

(17) – (20) בדקו עם המורה בכיתה.

(21) (א)+(ב) צ.ז.צ או ז.צ.ז. (ג) $\measuredangle ABC = 76°$

(22) לפי צ.ז.צ.

גבי יקואל

www.mishbetzet.co.il

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