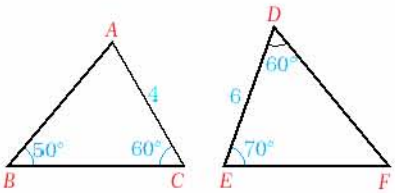
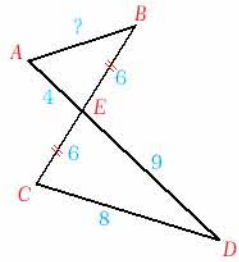
CHAPTER REVIEW TEST 3A

1. 

$\Delta ABC \sim \Delta DEF$ is given with $m(\angle B) = 50°$, $m(\angle C) = m(\angle D) = 60°$, $m(\angle E) = 70°$, $AC = 4$ cm and $DE = 6$ cm. What is the scale factor of similarity of these triangles?

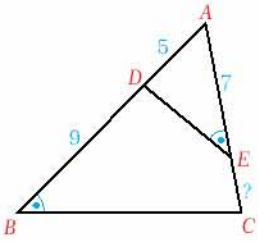
A) $\frac{1}{2}$ B) $\frac{2}{3}$ C) $\frac{3}{4}$ D) $\frac{2}{5}$ E) $\frac{3}{5}$

2. In the figure, E is the intersection point of AD and BC. $AE = 4$, $EB = EC = 6$, $ED = 9$ and $DC = 8$ are given. Find the length of AB.



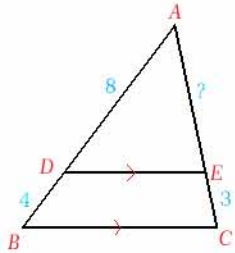
A) 3 B) 4 C) 5 D) $\frac{16}{3}$ E) $\frac{18}{5}$

3. In the figure, $m(\angle B) = m(\angle DEA)$, $AD = 5$, $DB = 9$ and $AE = 7$. What is the length of EC?



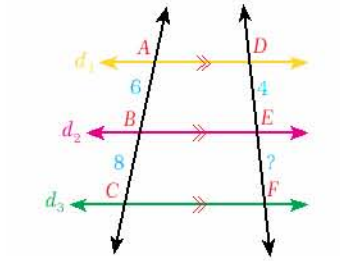
A) 1 B) 2 C) 3 D) 4 E) 5

4. In the figure, $DE \parallel BC$. Find the length of AE.



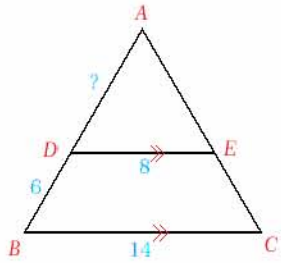
A) 9 B) 8 C) 7 D) 6 E) 4

5. In the figure, $d_1 \parallel d_2 \parallel d_3$. If $AB = 6$, $BC = 8$ and $DE = 4$, what is the length of EF?



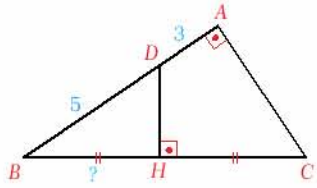
A) $\frac{8}{3}$ B) 4 C) $\frac{9}{2}$ D) 5 E) $\frac{16}{3}$

6. In the figure, $DE \parallel BC$. If $DB = 6$, $DE = 8$ and $BC = 14$, what is the length of AD?



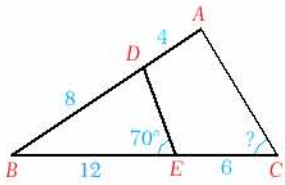
A) 6 B) 7 C) 8 D) 9 E) 12

7. In the figure, $DH \perp BC$, $AB \perp AC$ and $HB = HC$. If $AD = 3$ and $BD = 5$, what is the length of BH?



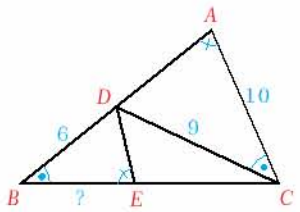
A) 3 B) 4 C) $2\sqrt{5}$ D) 5 E) $4\sqrt{2}$

8. In the figure, $AD = 4$, $DB = 8$, $BE = 12$, $EC = 6$ and $m(\angle DEB) = 70°$. What is $m(\angle ACB)$?



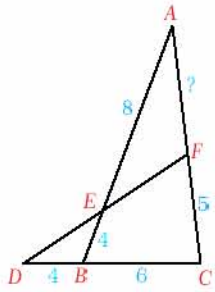
A) 50° B) 55° C) 60° D) 65° E) 70°

9. In the figure, $m(\angle B) = m(\angle DCA)$, $m(\angle A) = m(\angle BED)$, $BD = 6$, $DC = 9$ and $AC = 10$. Find the length of BE.



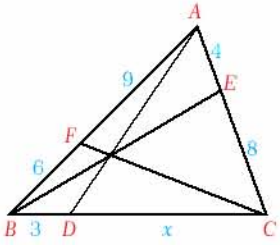
A) $\frac{20}{3}$ B) 7 C) $\frac{24}{5}$ D) $\frac{25}{3}$ E) 8

10. In the figure, D, B, C and D, E, F are two sets of collinear points. If $AE = 8$, $EB = DB = 4$, $BC = 6$ and $FC = 5$, what is the length of AF?



A) 2 B) 3 C) 4 D) 5 E) 6

11. In the figure, $AF = 9$, $FB = 6$, $AE = 4$, $EC = 8$ and $BD = 3$. What is the length $DC = x$?

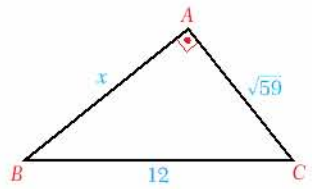


A) 6 B) 7 C) 8 D) 9 E) 12

12. A triangle T has sides with lengths 8, 10 and 12. The longest side of another triangle which is similar to T has length 30. Find the perimeter of the second triangle.

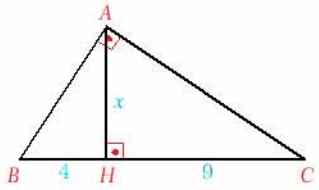
A) 55 B) 60 C) 65 D) 70 E) 75

13. Find the length x in the figure.



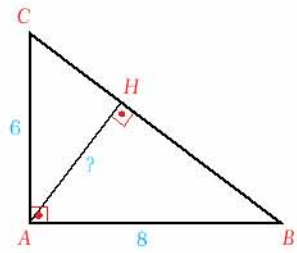
A) $\sqrt{85}$ B) $4\sqrt{5}$ C) $6\sqrt{2}$ D) 8 E) $5\sqrt{2}$

14. Find the value of x in the figure.



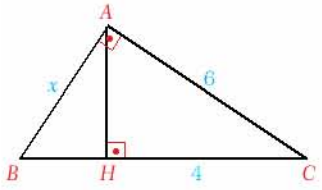
A) 5 B) 6 C) $2\sqrt{10}$ D) $3\sqrt{5}$ E) 8

15. In the figure, $AC \perp AB$ and $AH \perp BC$. If $AC = 6$ cm and $AB = 8$ cm, what is the length of AH?



A) 3 cm B) 3.6 cm C) 4 cm D) 4.8 cm E) 5.4 cm

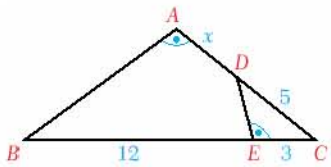
16. Find the length x in the figure.



A) 8 B) 7 C) $3\sqrt{5}$ D) 6 E) $3\sqrt{3}$

CHAPTER REVIEW TEST 3B

1. In the figure, $m(\angle A) = m(\angle DEC)$. If $BE = 12$, $EC = 3$ and $DC = 5$, what is the value of x?

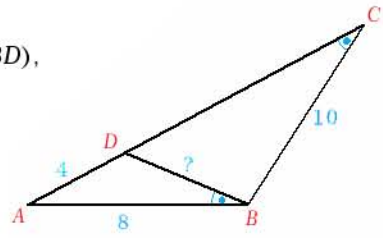


A) 2 B) 3 C) 4 D) 5 E) 6

2. A line d which is parallel to side EF of a triangle DEF cuts DE and DF at the points M and N respectively. If $DM = 8$, $P(\Delta DMN) = 18$ and $P(\Delta DEF) = 45$, what is the length of DE?

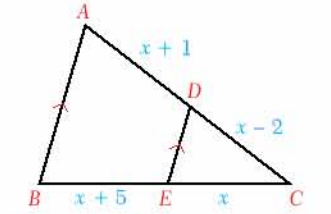
A) 16 B) 20 C) 22 D) 24 E) 26

3. In the figure, $m(\angle C) = m(\angle ABD)$, $AB = 8$, $BC = 10$ and $AD = 4$. What is the length of BD?



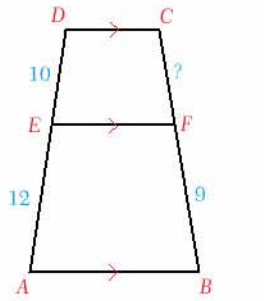
A) 6 B) 5 C) 4 D) 3 E) 2

4. In the figure, $DE \parallel AB$. Find the value of x.



A) 1 B) 2 C) 3 D) 4 E) 5

5. In the figure, $DC \parallel EF \parallel AB$, $DE = 10$, $EA = 12$ and $FB = 9$. What is the length of CF?

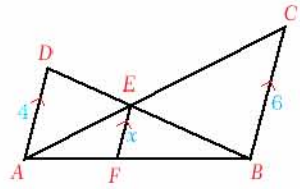


A) 6 B) 7 C) $\frac{15}{2}$ D) 8 E) $\frac{17}{2}$

6. In a triangle KLM, points R and P lie on the sides KL and LM respectively such that MR and KP are altitudes of ΔKLM. If T is the intersection point of KP and MR, $KT : MT = 2 : 3$ and $MP = 6$, what is the length of KR?

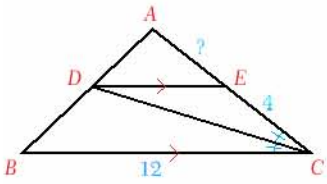
A) 2 B) 3 C) 4 D) 5 E) 6

7. In the figure, $AD \parallel EF \parallel BC$, $AD = 4$ and $BC = 6$. Find the length $EF = x$.



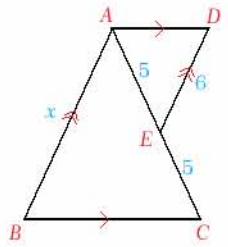
A) 2 B) 2.4 C) 3 D) 3,6 E) 4

8. In the figure, CD is the bisector of $\angle C$ and $DE \parallel BC$. If $BC = 12$ and $EC = 4$, what is the length of AE?



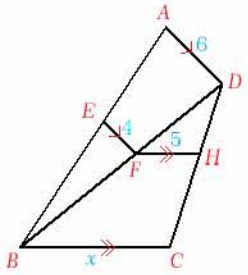
A) 8 B) 6 C) 4 D) 3 E) 2

9. In the figure, $AD \parallel BC$ and $AB \parallel DE$. If $DE = 6$ cm and $AE = EC = 5$ cm, what is the length x?



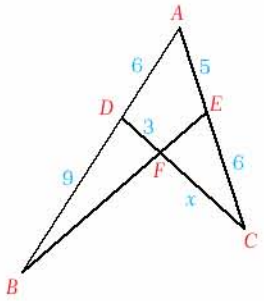
A) 12 cm B) 13 cm C) 14 cm D) 16 cm E) 18 cm

10. In the figure, $AD \parallel EF$ and $FH \parallel BC$. Find the value of x.



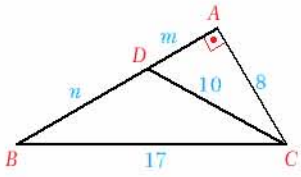
A) 15 B) 12 C) 10 D) 9 E) 8

11. In the figure, $AE = 5$, $AD = EC = 6$, $DB = 9$ and $DF = 3$. What is the length $FC = x$?



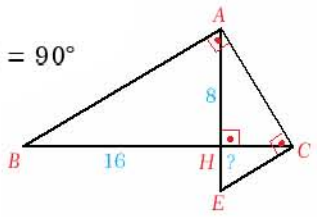
A) 4 B) 5 C) 6 D) 8 E) 9

12. What is $\frac{m}{n}$ in the figure?



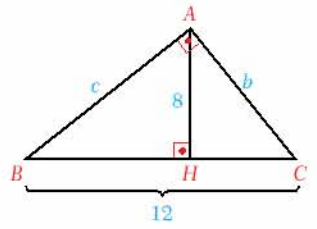
A) $\frac{1}{2}$ B) $\frac{2}{3}$ C) $\frac{3}{2}$ D) $\frac{3}{4}$ E) $\frac{3}{5}$

13. In the figure, $m(\angle BAC) = m(\angle ACE) = 90°$ and $AE \perp BC$. If $BH = 16$ and $AH = 8$, what is the length of EH?



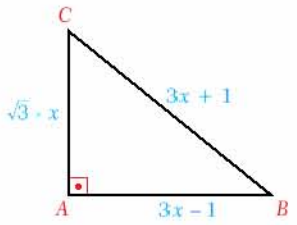
A) 1 B) 2 C) 3 D) 4 E) 6

14. In the figure, $m(\angle BAC) = 90°$ and $AH \perp BC$. If $BC = 12$ and $AH = 8$, what is the value of $b \cdot c$?



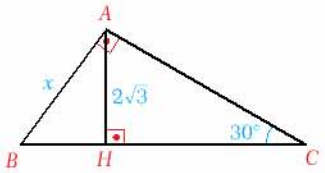
A) 60 B) 104 C) 48 D) 96 E) 80

15. In the figure, $AC \perp AB$, $AB = 3x - 1$, $AC = \sqrt{3}x$ and $BC = 3x + 1$. Find the value of x.



A) 1 B) 2 C) 3 D) 4 E) 5

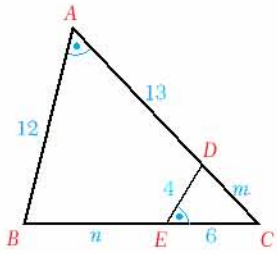
16. In the figure, $AC \perp AB$, $AH \perp BC$, $AH = 2\sqrt{3}$ and $m(\angle BCA) = 30°$. Find the value of x.



A) 8 B) $6\sqrt{3}$ C) 6 D) $4\sqrt{3}$ E) 4

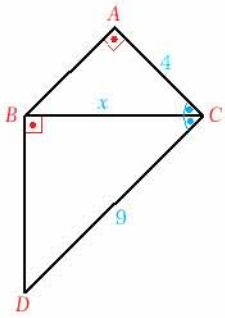
CHAPTER REVIEW TEST 3C

1. In the figure,
$m(\angle A) = m(\angle DEC)$.
Find the value of $\frac{m}{n}$.



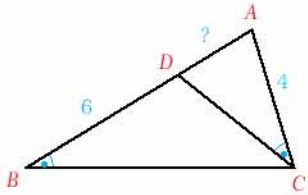
A) $\frac{5}{9}$ B) $\frac{5}{8}$ C) $\frac{5}{6}$ D) $\frac{4}{5}$ E) $\frac{3}{5}$

2. In the figure,
$AB \perp AC$,
$BC \perp BD$ and BC
bisects $\angle ACD$.
If $AC = 4$ and
$DC = 9$,
what is the value
of x?



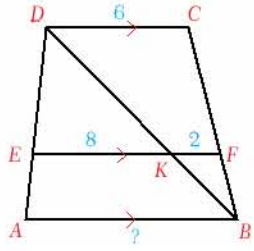
A) 5 B) 6 C) 7 D) 8 E) $\frac{25}{8}$

3. In the figure,
$m(\angle ACD) = m(\angle B)$,
$BD = 6$ and
$AC = 4$. Find the
length of AD.



A) 1 B) $\frac{3}{2}$ C) 2 D) 3 E) 4

4. In the figure,
$DC \parallel EF \parallel AB$.
If $DC = 6$,
$EK = 8$ and
$KF = 2$,
what is the length of
AB?

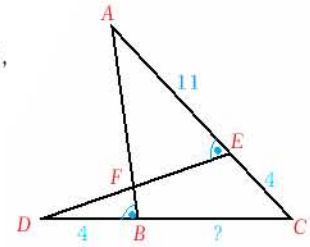


A) 12 B) 15 C) 16 D) 18 E) 24

5. The base KM of an isosceles triangle KLM measures 24 cm and one leg measures 27 cm. Points A and B are situated on the sides KL and LM respectively, such that $LA = LB$. If $P(\Delta LAB) = 26$ cm, find AK.

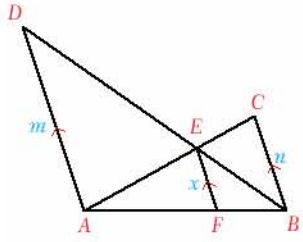
A) 9 cm B) 12 cm C) 15 cm
D) 18 cm E) 27 cm

6. In the figure,
$m(\angle DBF) = m(\angle AEF)$,
$AE = 11$ and
$EC = DB = 4$.
Find the length of BC.



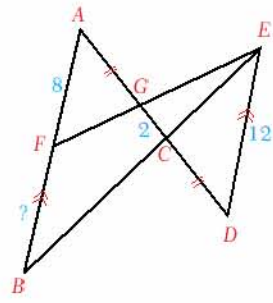
A) 5 B) 6 C) 7 D) 8 E) 10

7. In the figure,
$AD \parallel EF \parallel BC$.
$AD = m$,
$BC = n$,
$EF = x$,
$m + n = 15$ and
$m \cdot n = 54$ are given. Find the value of x.



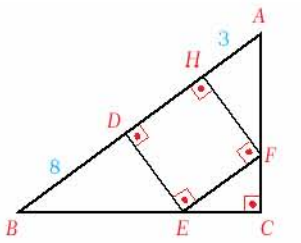
A) 3 B) 3.6 C) 4 D) 4.2 E) 5.4

8. In the figure,
$AB \parallel ED$
$AG = CD$,
$AF = 8$,
$GC = 2$ and
$DE = 12$.
What is the
length of FB?



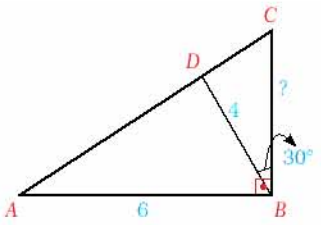
A) 9 B) 10 C) 12 D) 15 E) 16

9. In the figure, ΔABC is a right triangle and $DEFH$ is a square. If $AH = 3$ and $BD = 8$, what is the length of one side of $DEFH$?



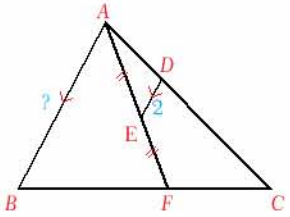
A) $2\sqrt{6}$ B) 5 C) $4\sqrt{2}$ D) 6 E) $3\sqrt{5}$

10. In the figure, ΔABC is a right triangle and $m(\angle CBD) = 30°$. If $AB = 6$ and $DB = 4$, what is the length of BC?
(Hint: Draw an altitude from D to AB.)



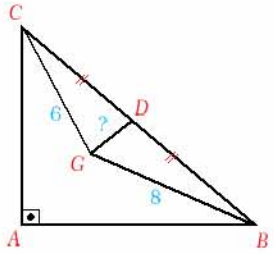
A) $4\sqrt{3}$ B) 6 C) $3\sqrt{3}$ D) $2\sqrt{6}$ E) $3\sqrt{2}$

11. In the figure, $DC = 2 \cdot AD$ and $AE = EF$. If $DE \parallel AB$ and $DE = 2$, what is the length of AB?



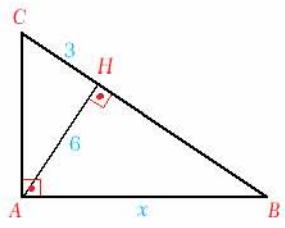
A) 8 B) 9 C) 12 D) 15 E) 16

12. In the figure, G is the centroid of ΔABC. If $CD = DB$, $GC = 6$ and $GB = 8$, what is the length of GD?



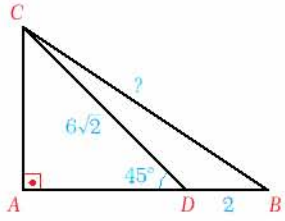
A) 2 B) $\sqrt{5}$ C) 3 D) $2\sqrt{3}$ E) $2\sqrt{5}$

13. Find the length x in the figure.



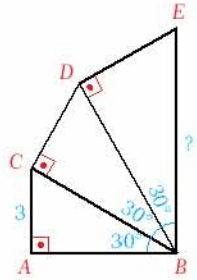
A) 10 B) 12 C) 13 D) $4\sqrt{10}$ E) $6\sqrt{5}$

14. In the figure, $AB \perp AC$. If $m(\angle ADC) = 45°$, $DB = 2$ and $CD = 6\sqrt{2}$, what is the length of BC?



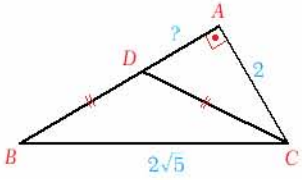
A) 9 B) $3\sqrt{10}$ C) 10 D) $3\sqrt{13}$ E) 13

15. In the figure, $AC = 3$. Find the length of BE.



A) 12 B) 10 C) 8 D) 6 E) 4

16. In the figure, $m(\angle A) = 90°$, $BD = DC$, $AC = 2$ and $BC = 2\sqrt{5}$. What is the length of AD?



A) 1 B) $\frac{3}{2}$ C) 2 D) $\frac{5}{2}$ E) 3