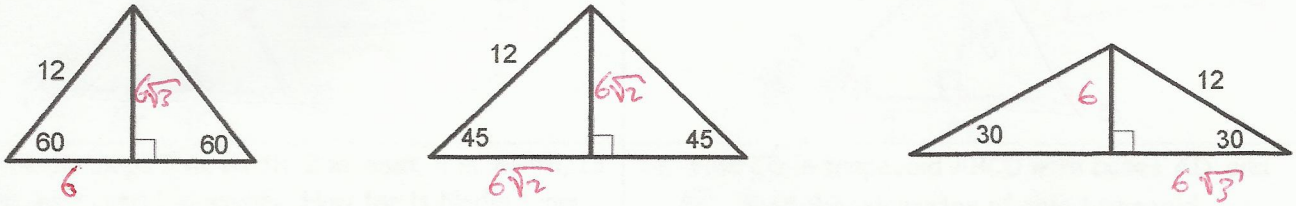
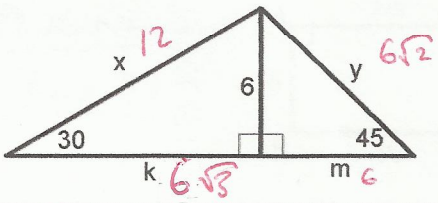
KEY

WORKSHEET ON RIGHT TRIANGLES

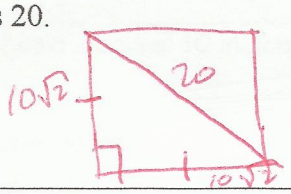
1. Find the length of each altitude.
   a. $6\sqrt{3}$ b. $6\sqrt{2}$ c. 6



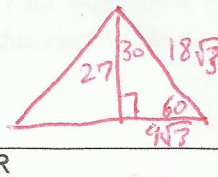
2. Find x, y, k, and m.
   x= 12 y= $6\sqrt{2}$
   k= $6\sqrt{3}$ m= 6



$10\sqrt{2}$ 3. Find the length of a side of a square whose diagonal measures 20.

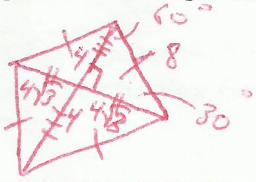


$18\sqrt{3}$ 4. Find the length of a side of an equilateral triangle whose altitude measures 27.

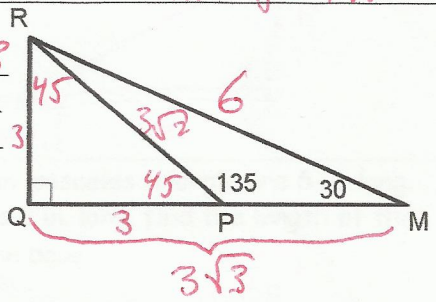


$4\sqrt{3} = 27$
$4 = \frac{27}{\sqrt{3}}$
$4 = 9\sqrt{3}$

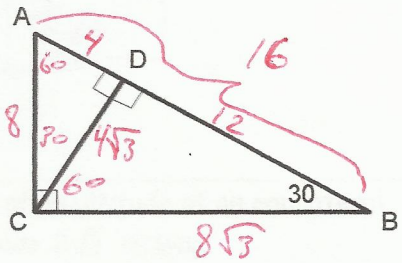
$8\sqrt{3}$, 8 5. A side of a rhombus has length 8, and the measure of one angle of the rhombus is 60. Find the lengths of the diagonals of the rhombus.



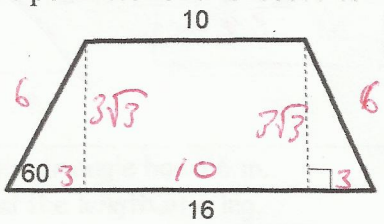
6. MR = 6
   MP = $3\sqrt{3} - 3$
   PR = $3\sqrt{2}$
   PQ = 3



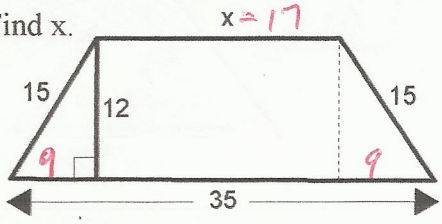
7. BC = $8\sqrt{3}$
   AC = 8
   AB = 16
   CD = $4\sqrt{3}$



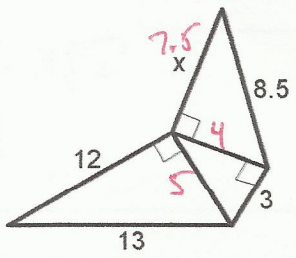
38 8. Find the perimeter of this isosceles trapezoid.



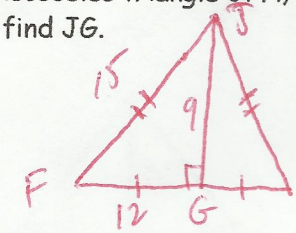
17 9. Find x.



7.5 10. Find x.

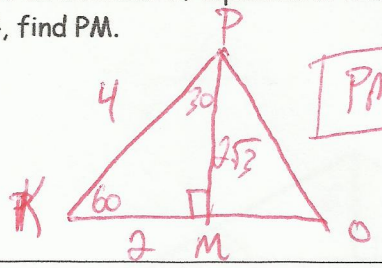


11. If $\overline{JG}$ is the altitude to the base $\overline{FH}$ of isosceles triangle JFH, FJ = 15, and FH = 24, find JG.



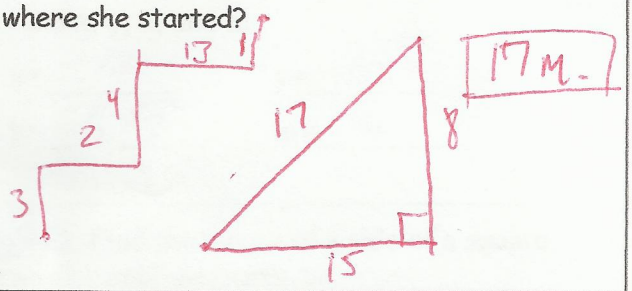
JG = 9

12. $\overline{PM}$ is an altitude of equilateral triangle PKO. If PK = 4, find PM.



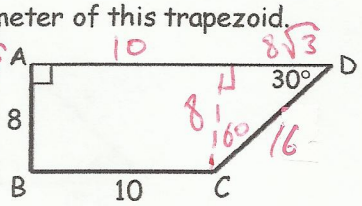
PM = 2√3

13. Nadia skips 3 m. north, 2 m. east, 4 m. north, 13 m. east, and 1 m. north. How far is Nadia from where she started?



17 m.

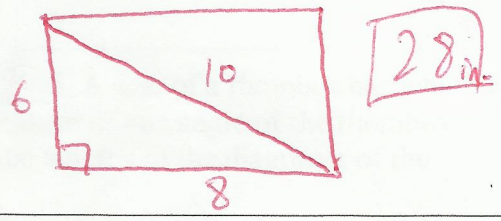
14. Find CD in trapezoid ABCD with bases $\overline{AD}$ and $\overline{BC}$. Find the perimeter of this trapezoid.



8 + 16 + 10 + 10 + 8√3

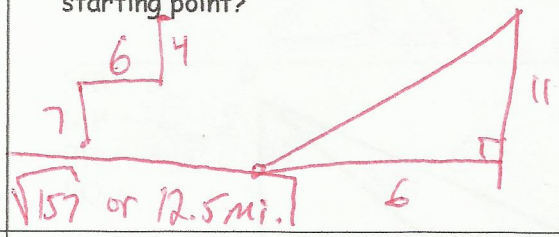
44 + 8√3

15. A rectangle 6 in. wide has a diagonal 10 in. long. Find the perimeter.

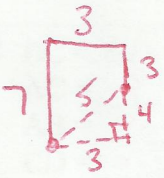


28 in.

16. A man travels 7 mi. due north, 6 mi. due east, and then 4 mi. due north. Ho far is he from his starting point?

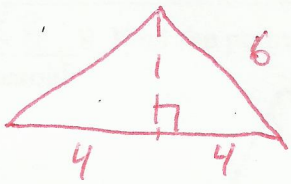


17. A man travels 7 mi. due north, 3 mi. due east, and then 3 mi. due south. How far is he from his starting point?



5 mi.

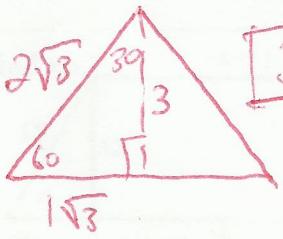
18. The legs of an isosceles triangle are 6 in. long. If the base is 8 in. long, find the length of the altitude to the base.



√20

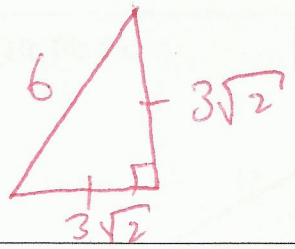
2√5 in.

19. Find the length of an altitude of an equilateral triangle with a side $2\sqrt{3}$ in. long.



3 in.

20. An isosceles right triangle has a 6 in. hypotenuse. Find the length of a leg.



3√2 in.