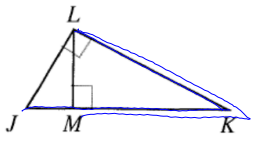
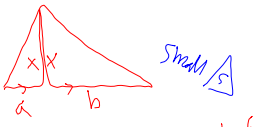
Theorem 8–1 Questions, Part 2.

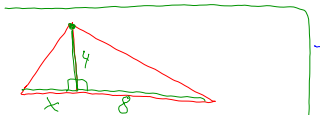
Use the below figure to solve the following problems.

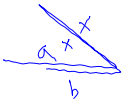




$\frac{a}{x} = \frac{x}{b}$ get out of jail

22. If $LM = 4$ and $MK = 8$, find JM.





$\frac{a}{x} = \frac{x}{b}$

NOTE

Geom. mean

$\frac{a}{x} = \frac{x}{b}$

$ab = x^2$

$\sqrt{ab} = x$ = Geom. Mean

$\frac{2}{x} = \frac{x}{3}$ $x = \sqrt{2 \cdot 3}$

altitude = 4 hypotenuse

$\frac{x}{4} = \frac{4}{8}$ get out of jail

$\frac{x}{4} = \frac{1}{2}$ simplify

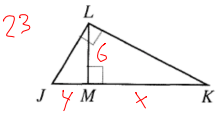
$4\left(\frac{x}{4}\right) = 4\left(\frac{1}{2}\right)$

$x = 2$ → $JM = 2$

23. If $LM = 6$ and $JM = 4$, find MK.

24. If $JM = 3$ and $MK = 6$, find LM.

23

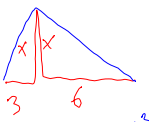


$\frac{4}{6} = \frac{6}{x}$ $\frac{3}{2}(6) = \left(\frac{x}{6}\right)6$

$\frac{2}{3} = \frac{6}{x}$ $9 = x$

$\frac{3}{2} = \frac{x}{6}$ $MK = 9$

24.



$\frac{3}{x} = \frac{x}{6}$ $x^2 = 18$

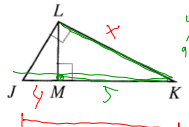
$3 \cdot 6 = x^2$ $x = \sqrt{18}$

$x = 3\sqrt{2}$

25. If $JM = 4$ and $JK = 9$, find LK.

26. If $JM = 3$ and $MK = 9$, find LJ.

25.



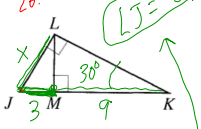
45 → 9 · 5

45 → 15 → 3 → $3\sqrt{5}$

$\frac{9}{x} = \frac{x}{5}$ $x = \sqrt{45}$

$x^2 = 45$ $x = 3\sqrt{5}$

26.



$LJ = 6$

$x^2 = 12 \cdot 3$

$x^2 = 4 \cdot 3 \cdot 3$

$x^2 = 2 \cdot 2 \cdot 3 \cdot 3$

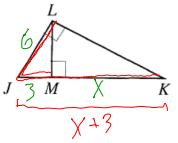
$x = 2 \cdot 3$

$x = 6$

$\frac{12}{x} = \frac{x}{9}$

27. If $JM = 3$ and $JL = 6$, find MK.

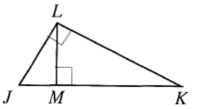
28. If $JL = 9$ and $JM = 6$, find MK.



$\frac{x+3}{6} = \frac{6}{3}$

$x + 3 = \left(\frac{6}{3}\right)(6)$ $x = 9$

$x + 3 = 12$ $MK = 9$



29. If $LK = 3\sqrt{6}$ and $MK = 6$, find JM.

30. If $LK = 7$ and $MK = 6$, find JM.