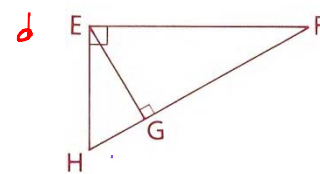
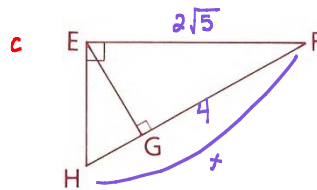
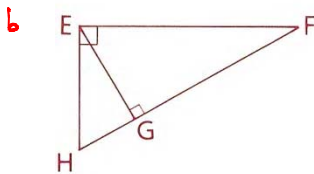
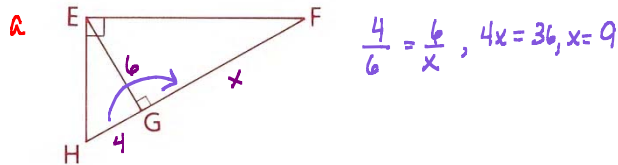


Objectives (review old notes for specific objectives)

- Simplify radicals
- Introduction to circles
- Altitude-on-hypotenuse theorem
- Pythagorean theorem
- Distance formula
- Reduced triangle principle
 - Families of right triangles
 - Special right triangles
- Pythagorean theorem in 3D shapes

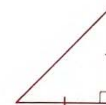
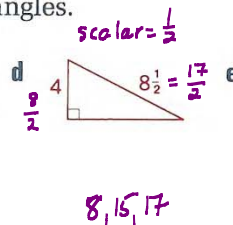
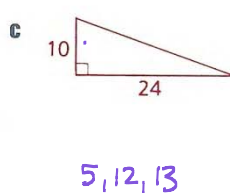
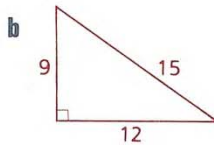
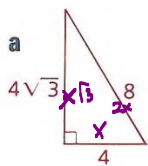
Problem Set A

- 1 a Find GF if HG = 4 and EG = 6.
b Find EH if GH = 4 and GF = 12.
c Find HF if EF = $2\sqrt{5}$ and GF = 4.
d Find HF if EH = 2 and EF = 3.

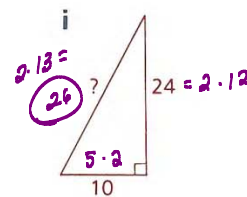
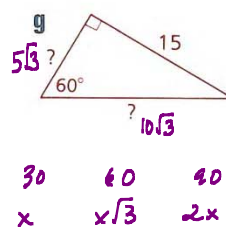
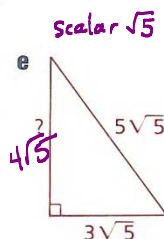
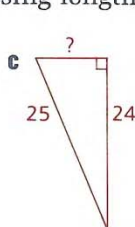
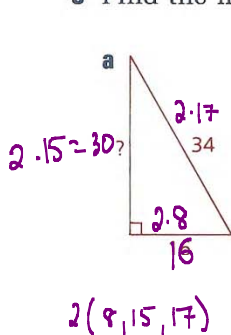


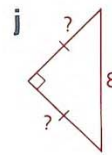
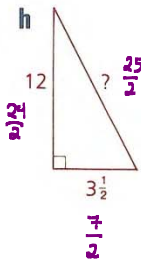
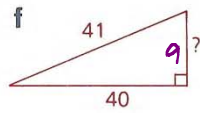
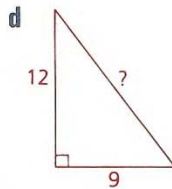
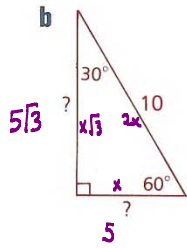
$\frac{\text{leg}}{\text{hyp}} : \frac{2\sqrt{5}}{x} = \frac{4}{2\sqrt{5}} \rightarrow 4x = 20 \rightarrow x = 5$

- 2 Identify the family of each of these special right triangles.

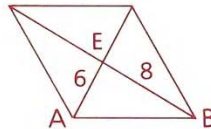


- 3 Find the missing lengths.



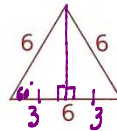


- 4 If $AE = 6$ and $BE = 8$, what is the perimeter of the rhombus shown?



- 5 Find the altitude of the triangle shown.

$$\begin{array}{r} 30 \\ \times \\ 3 \\ \hline 60 \\ \times \sqrt{3} \\ \hline 90 \\ 2x \\ 6 \end{array}$$

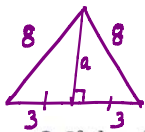


- 6 Vail skied 2 km north, 2 km west, 1 km north, and 2 km west. How far was she from her starting point?



- 7 A 25-ft ladder just reaches a point on a wall 24 ft above the ground. How far is the foot of the ladder from the wall?

- 8 Find, ~~to the nearest tenth,~~ the altitude to the base of an isosceles triangle whose sides have lengths of 8, 6, and 8.



$$\begin{aligned} 3^2 + a^2 &= 8^2 \\ a^2 &= 64 - 9 \\ a &= \sqrt{55} \end{aligned}$$

- 9 If the altitude of an equilateral triangle is $8\sqrt{3}$, find the perimeter of the triangle.

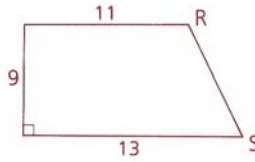
- 10 What is the length of a diagonal of a 2-by-5 rectangle?

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- 11** In the trapezoid shown, find RS.

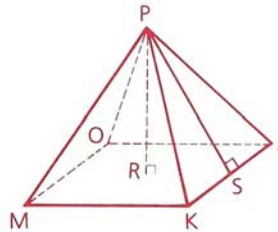


- 12** Given: TVWX is an isosceles trapezoid.
TX = 8, VW = 12, $\angle V = 30^\circ$
Find: TV and TZ

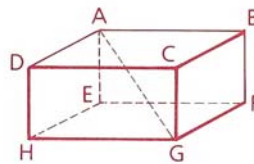


- 13** Find the diagonal of a rectangular solid whose dimensions are 4, 3, and 12.

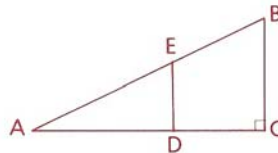
- 14** Given: The regular square pyramid shown,
PR = 20, PS = 25
Find: The perimeter of base JKMO



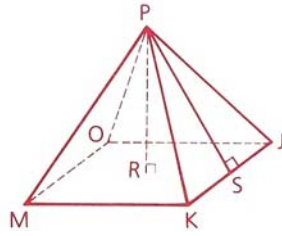
- 15** In the rectangular solid shown, find AG to the nearest tenth if DC = 12, CG = 7, and AD = 4.



- 16** Given: $\overline{AC} \perp \overline{CB}$, $\overline{DE} \parallel \overline{CB}$,
AC = 15, AB = 17, DE = 4
Find: **a** CB **c** AE **e** DC
 b AD **d** EB

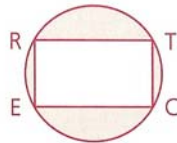


- 14 Given: The regular square pyramid shown,
 $PR = 20$, $PS = 25$
 Find: The perimeter of base JKMO

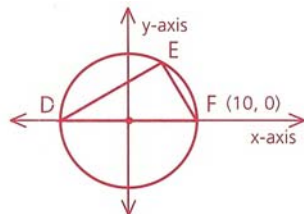


- 17 Find the distance from A to B if $A = (1, 11)$ and $B = (4, 15)$.

- 20 Given: RECT is a rectangle.
 $RE = 6$, $EC = 8$
 Find: **a** The measure of \widehat{RTC}
b The length of \widehat{RTC}
c The area of the shaded region to the nearest tenth



- 21 **a** Find $m\angle DEF$.
b Find $m\widehat{DEF}$.
c Find the length of \widehat{DEF} .



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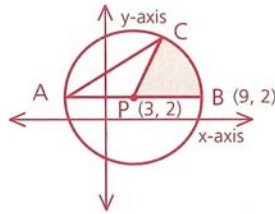
22 Given: $\odot P$, $\angle CAB = 30^\circ$

Find: **a** $m\widehat{BC}$

b $m\widehat{AC}$

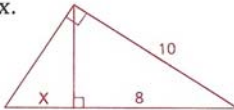
c The length of \widehat{BC}

d The area of the shaded region

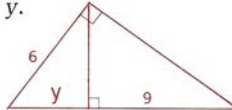


23 Two boats leave the harbor at 9:00 A.M. Boat A sails north at 20 km/hr. Boat B sails west at 15 km/hr. How far apart are the two boats at noon?

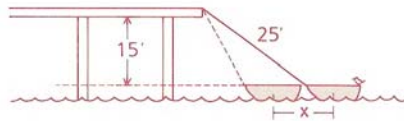
24 a Find x .



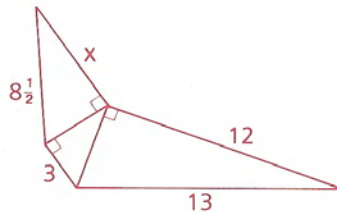
b Find y .



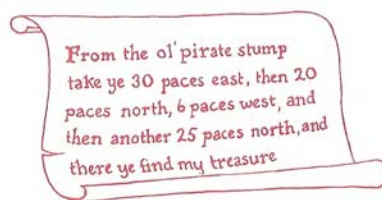
26 A boat is tied to a pier by a 25' rope. The pier is 15' above the boat. If 8' of rope is pulled in, how many feet will the boat move forward?



27 Find x .



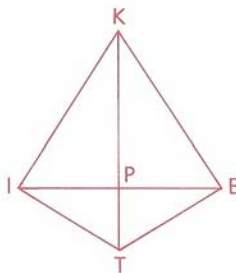
- 28 Follow the treasure map of Captain Zig Zag to see how far the treasure is from the old stump.



- 29 Given: Kite KITE with right \angle s KIT and KET,
 $KP = 9$, $TP = 4$

Find: **a** IE

b The perimeter of KITE



- 30 Given: RECT is a rectangle.

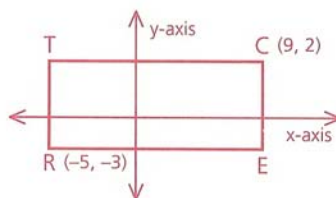
$\overline{CE} \parallel y\text{-axis}$,

$\overline{RE} \parallel x\text{-axis}$.

a Find the coordinates of E.

b Find the area of RECT.

c Find, to the nearest tenth, the length of \overline{RC} .



- 31 Show that quadrilateral QUAD, with $Q = (-1, -4)$, $U = (4, 11)$,
 $A = (1, 12)$, and $D = (-4, -3)$, is a rectangle.