

T-G-T

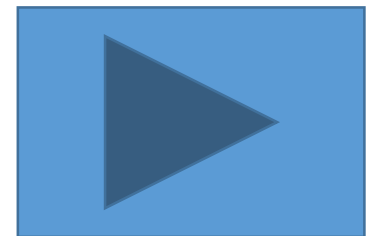
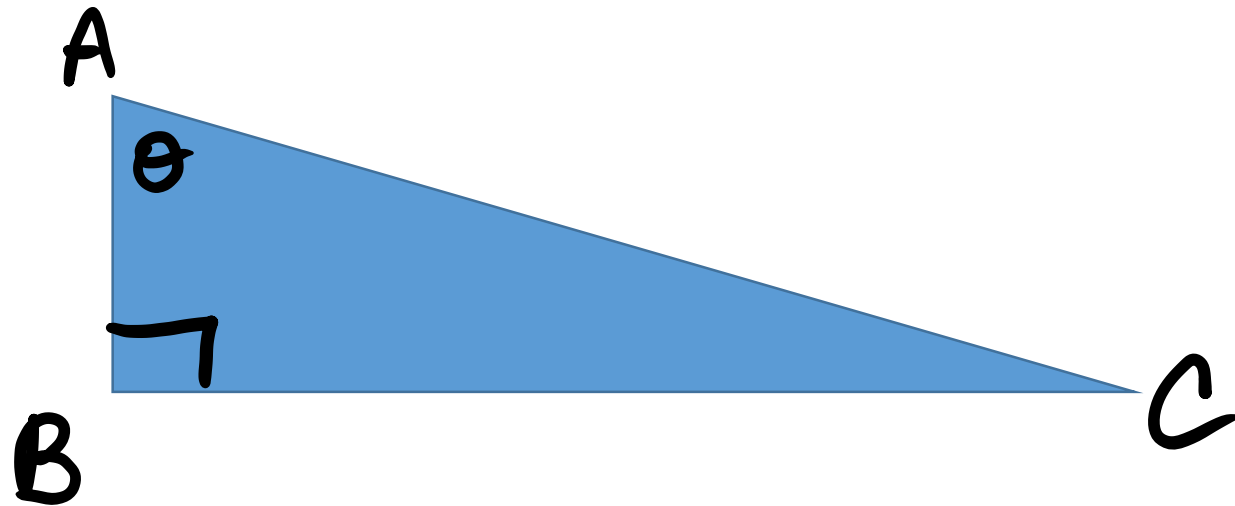
Trigonometry

Pick a question:

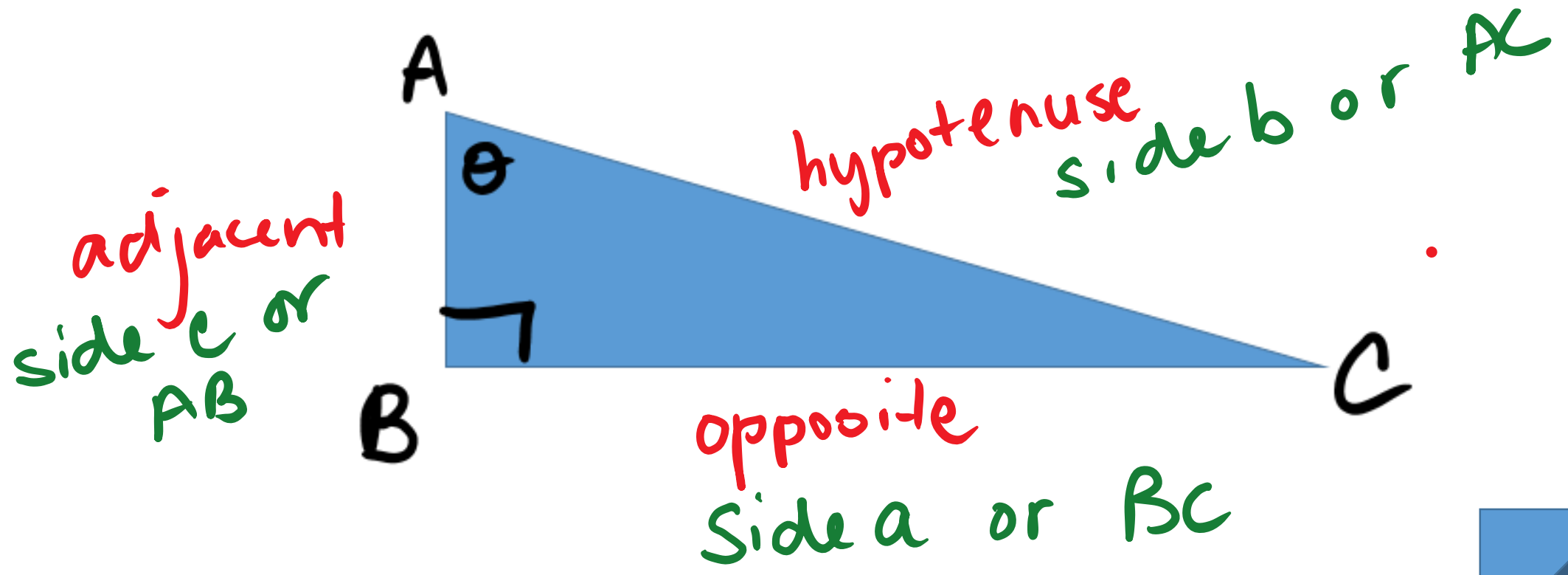
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>
<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>
<u>22</u>	<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>	<u>28</u>

#1

Name the sides of this triangle:

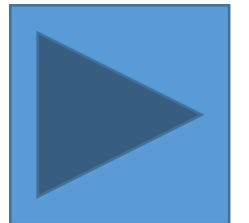
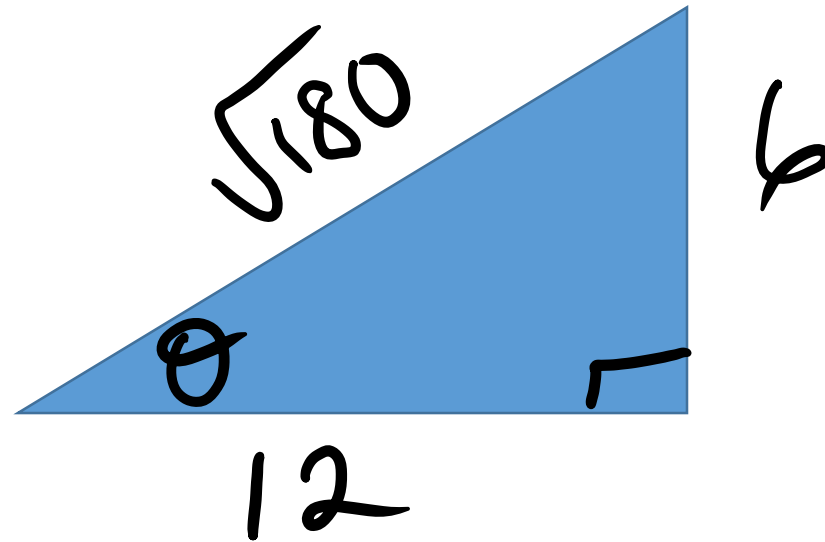


#1 answer



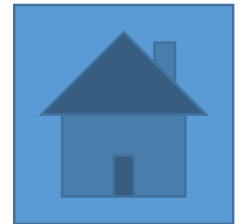
#2

What is the tangent ratio for this triangle?



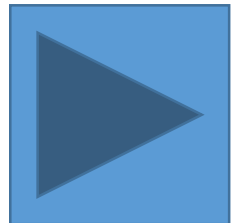
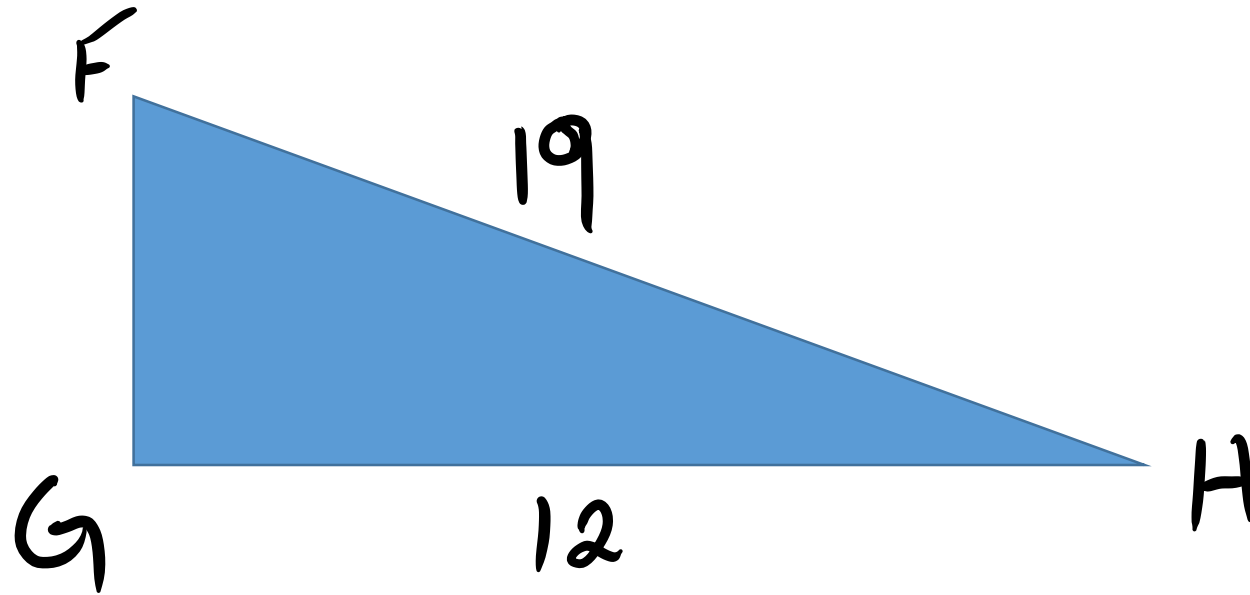
#2 answer

$$\frac{1}{2}$$



#3

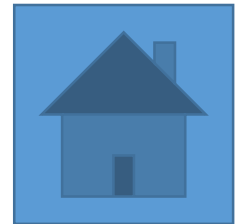
How long is side FG?



#3 answer

$$FG = \sqrt{217}$$

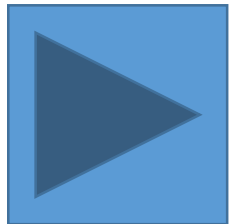
$$FG \doteq 14.7 \text{ units}$$



#4

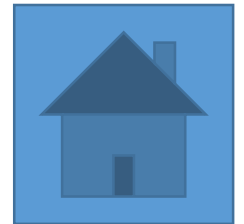
Solve:

$$\sin 60 = \frac{x}{12}$$



#4 answer

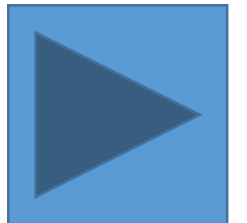
$$x \doteq 10.4 \text{ units}$$



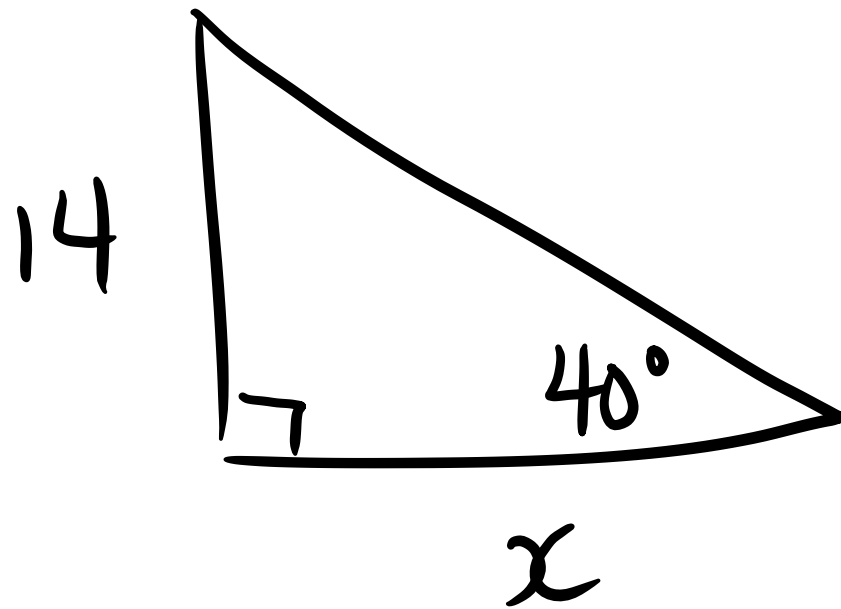
#5

**Draw a diagram that goes with
this equation**

$$\tan 40^\circ = \frac{14}{x}$$



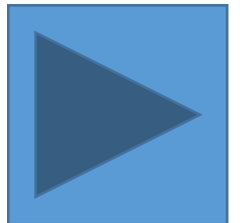
#5 answer



#6

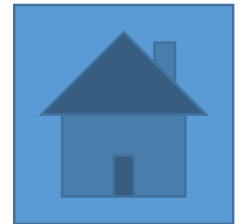
Solve:

$$\cos A = \frac{14}{22}$$



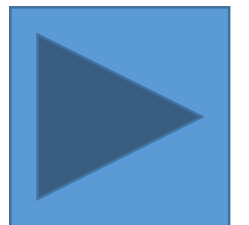
#6 answer

$$A \doteq 50^\circ$$



#7

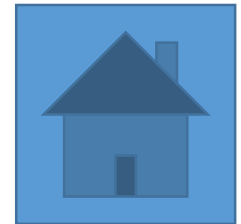
**What is the angle of elevation?
Draw a diagram to illustrate.**



#7 answer

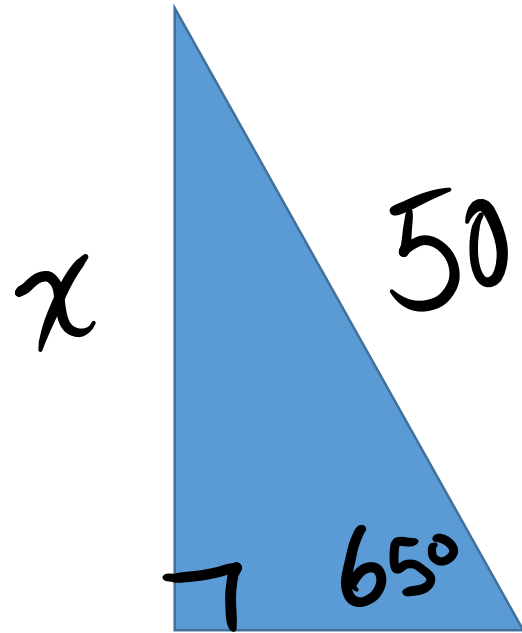
The angle above a horizontal
line

Ex.

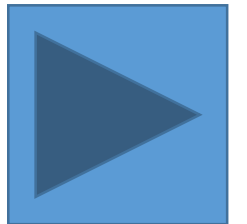


#8

Find X



.

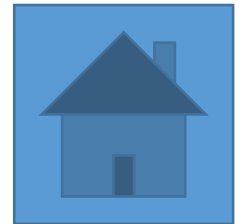


#8 answer

$$\sin 60 = \frac{x}{50}$$

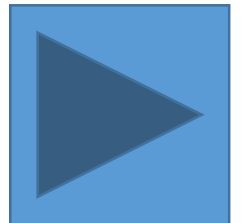
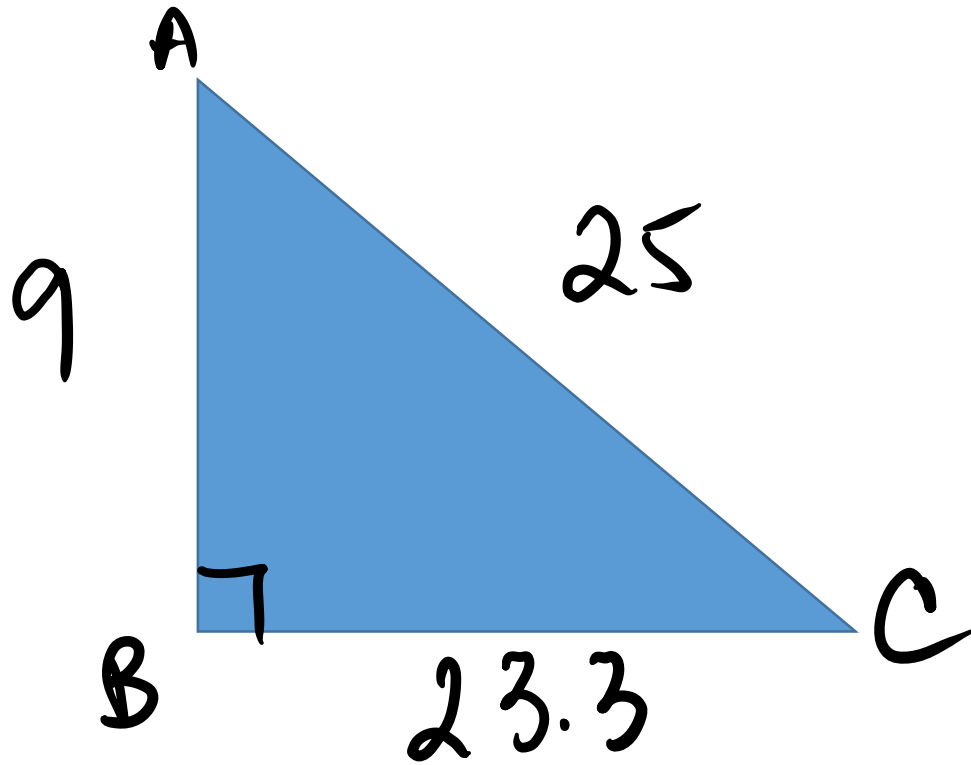
$$50(\sin 60) = x$$

$$43.3 \text{ units} \doteq x$$



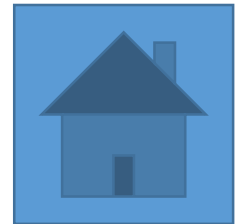
#9

Determine A



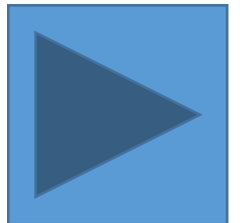
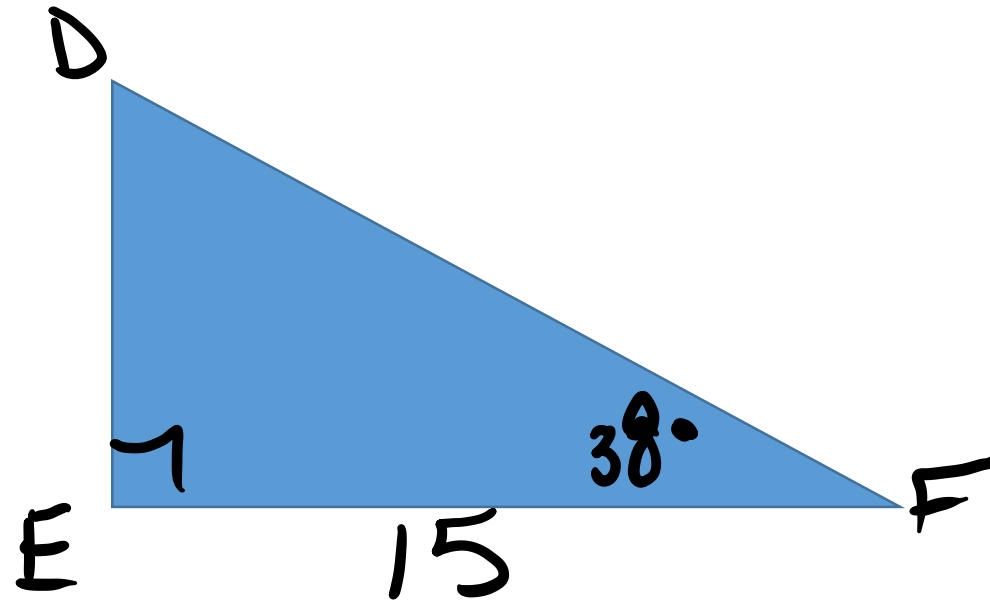
#9 answer

$$A = 69^\circ$$



#10

Write the 3 equations needed to solve this triangle.

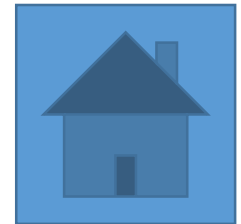


#10 answer

$$\angle D = 90 - 38$$

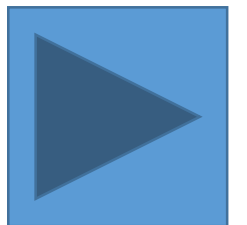
$$\tan 38 = \frac{f}{15}$$

$$\cos 38 = \frac{15}{e}$$



#11

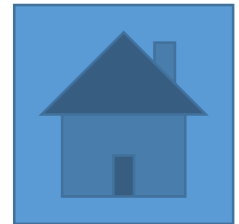
**A tree cast a 21.5 foot shadow.
If the angle of elevation of the sun is 71° ,
how tall is the tree?**



#11 answer

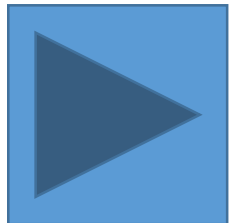
$$\tan 71 = \frac{h}{21.5}$$

$$h = 62.4 \text{ ft}$$

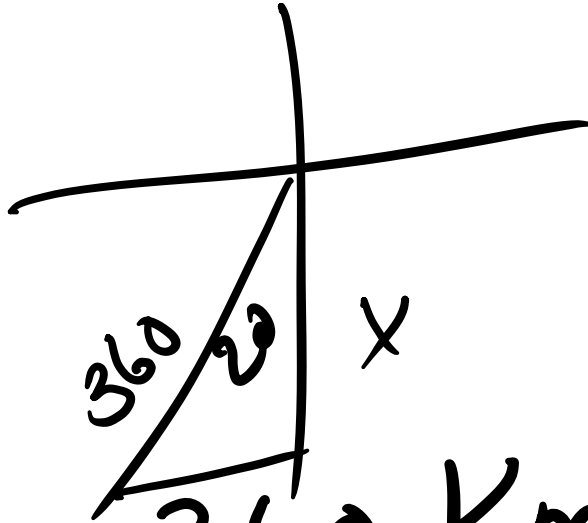


#12

**A plane is travelling on a bearing of 200.
If it is flying at 180 km/hr, how far has
It travelled in 2 hours? How far south?**



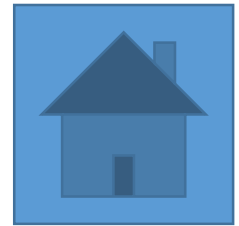
#12 answer



In 2 hrs \rightarrow 360 Km

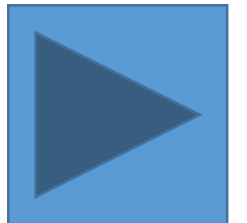
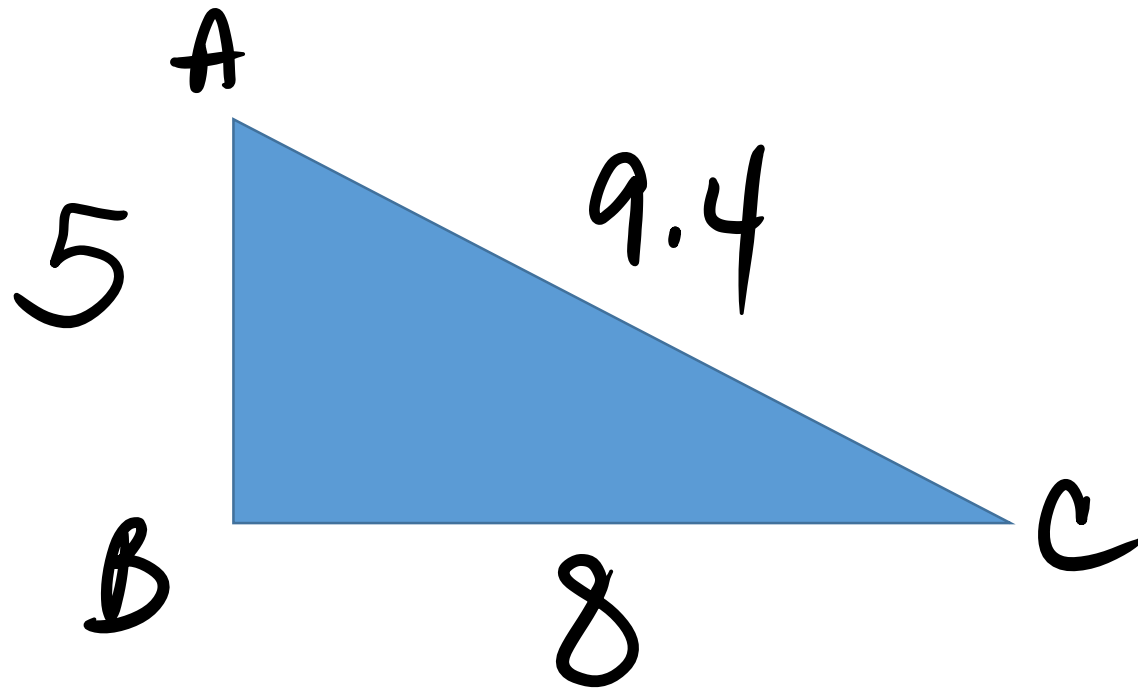
$$\cos 20 = \frac{x}{360}$$

$$x \doteq 338.3 \text{ Km South}$$



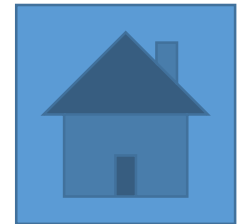
#13

Sin A ?



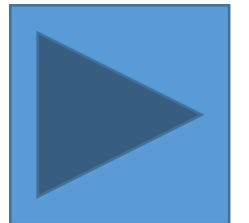
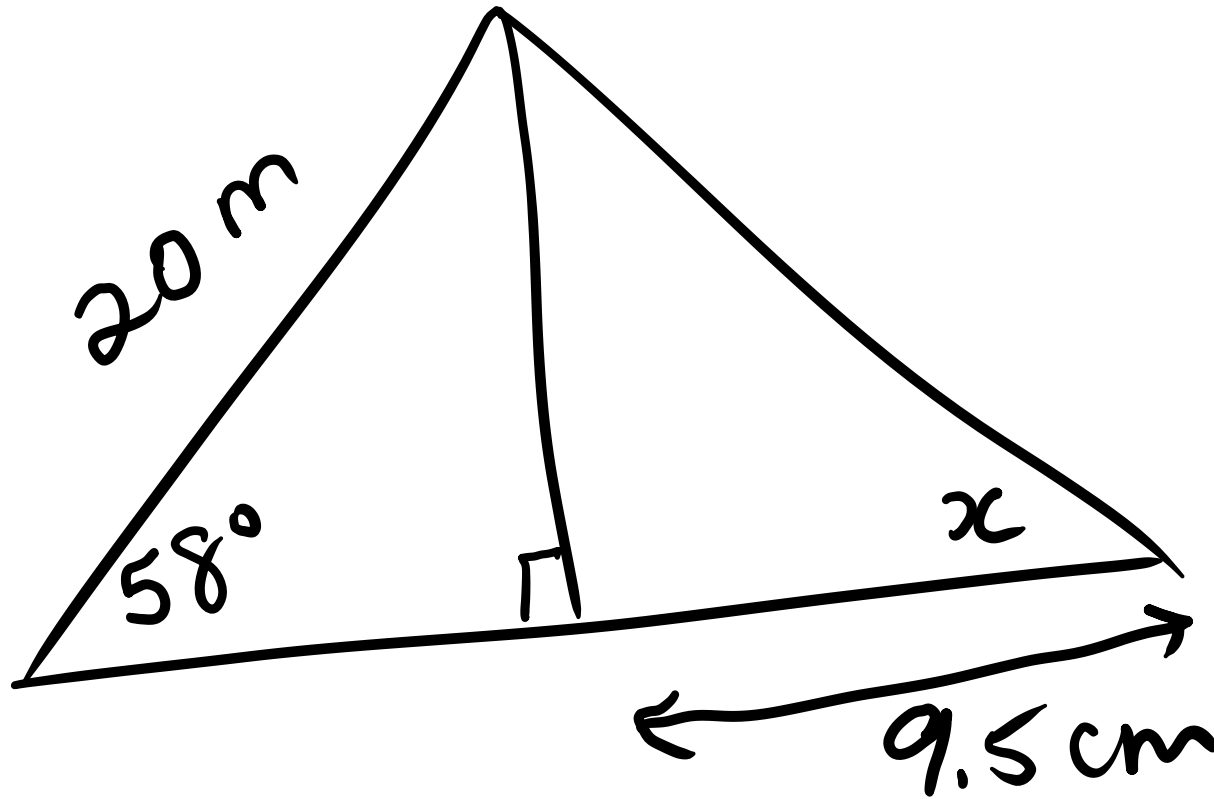
#13 answer

$$\frac{8}{9.4}$$



#14

Determine x



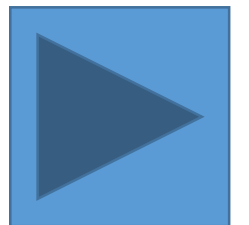
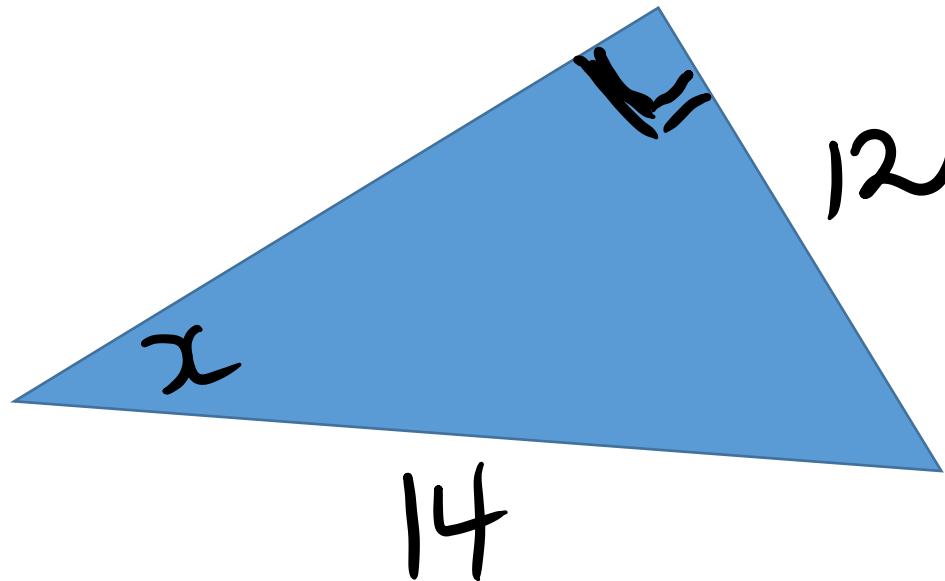
#14 answer

$$X \doteq 61^\circ$$



#15

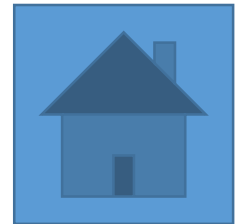
Which ratio is needed to find x ?



#15 answer

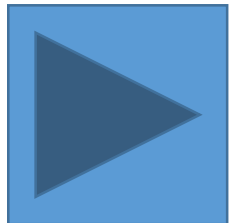
Sine

$$\left(\sin x = \frac{12}{14} \right)$$



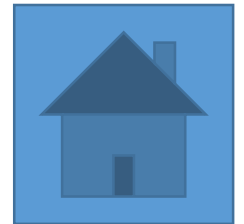
#16

Acronym used to remember the trig ratios?



#16 answer

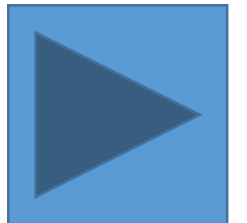
SoH CAH ToA



#17

Solve:

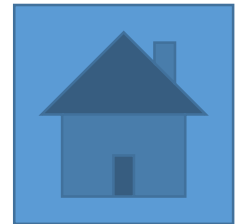
$$\cos A = 0.634$$



#17 answer

$$\angle A \cong 51^\circ$$

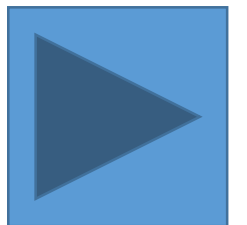
.



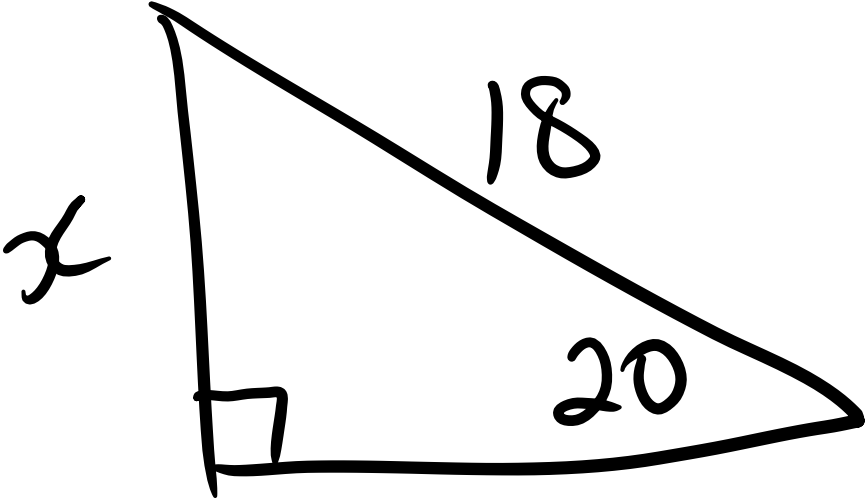
#18

**Draw a diagram that goes with
this equation**

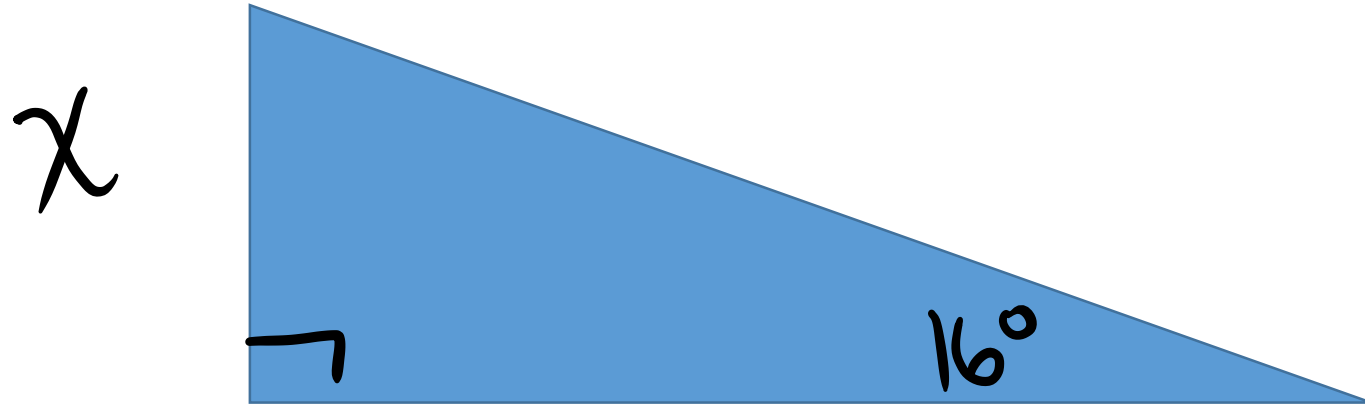
$$\sin 20 = \frac{x}{18}$$



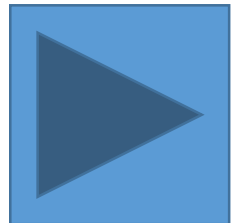
#18 answer



#19



Find x

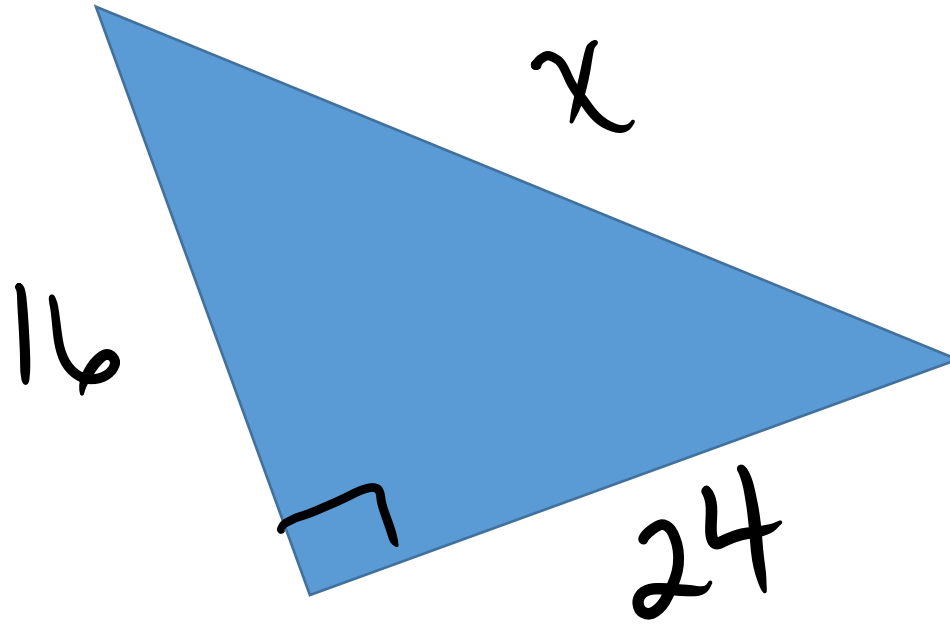


#19 answer

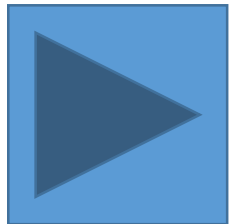
Not enough information
to find x



#20

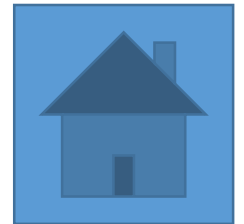


Find X



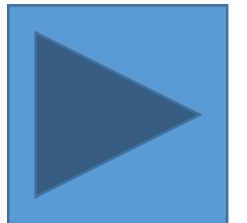
#20 answer

$$x = \sqrt{832}$$

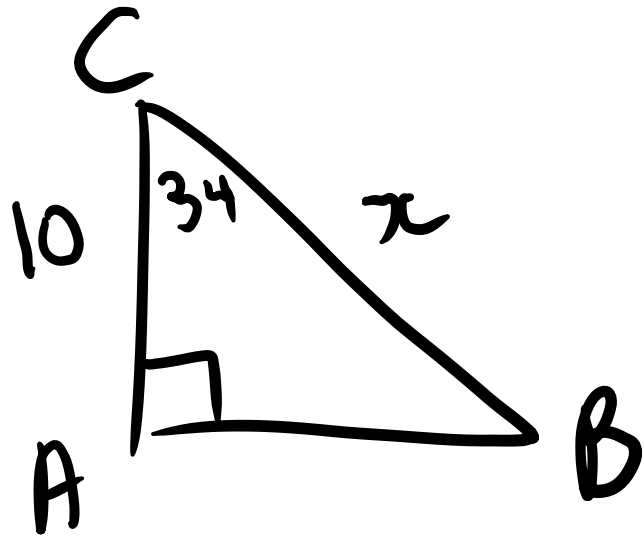


#21

**In triangle ABC , angle $CAB = 90^\circ$, $AC = 10$ cm
and angle $C = 34^\circ$. Find BC**

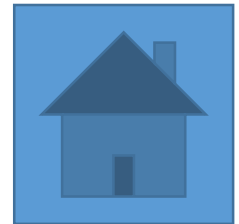


#21 answer



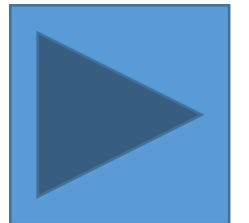
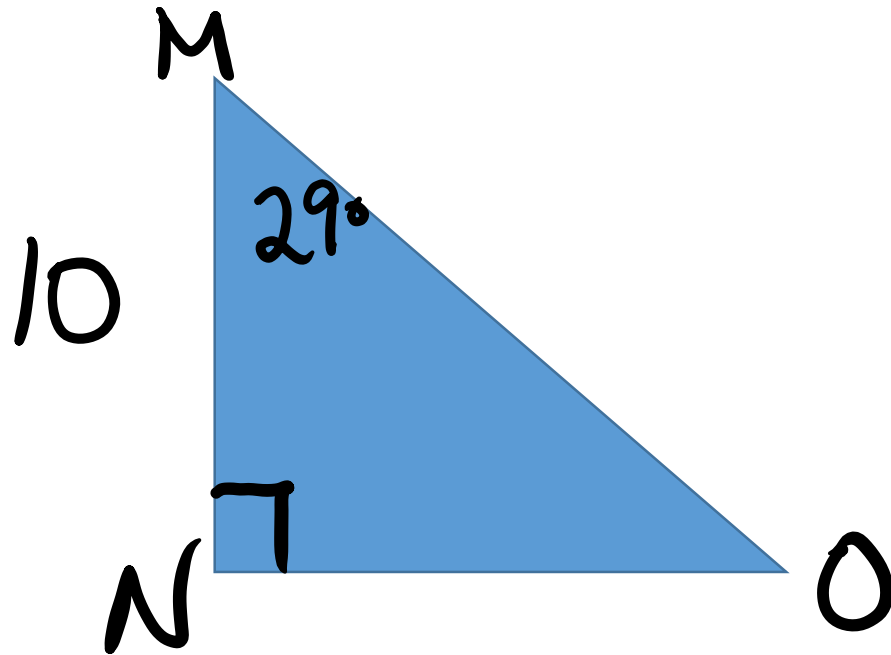
$$\cos 34 = \frac{10}{x}$$

$$x = 12.1 \text{ units}$$



#22

Which side is the shortest? Explain how you know,



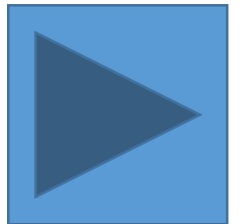
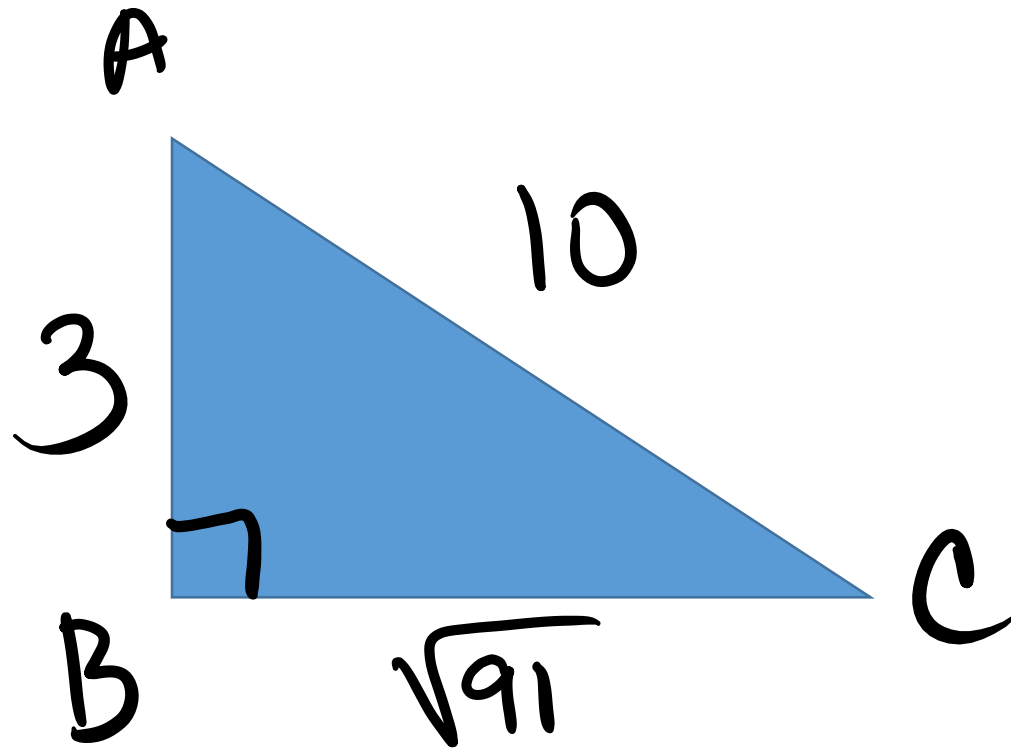
#22 answer

No is the shortest
because it is across from
the smallest angle ($\angle M = 29^\circ$)
A small angle is one less than
 45° .



#23

What is $\cos C$?



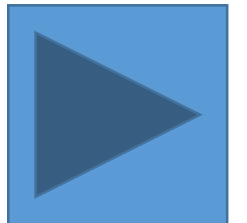
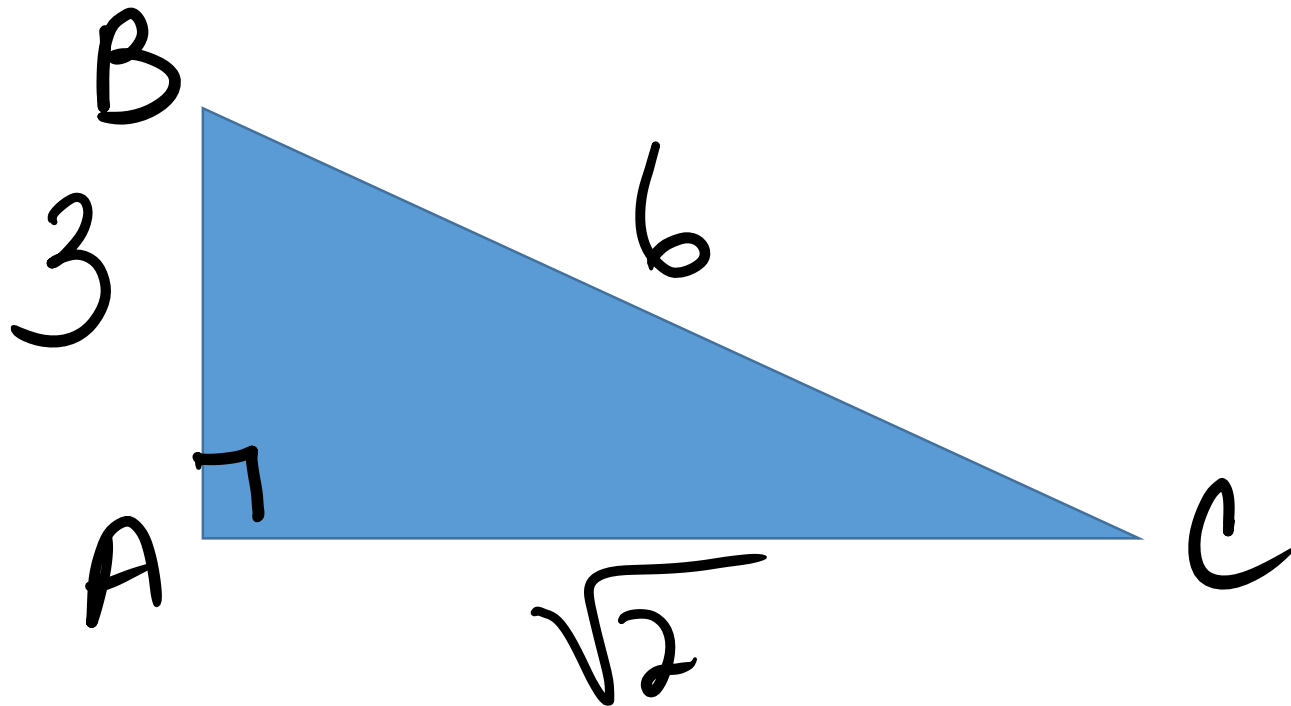
#23 answer

$$\frac{\sqrt{91}}{10}$$



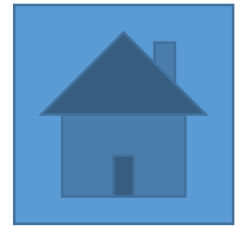
#24

What is $\sin A$?



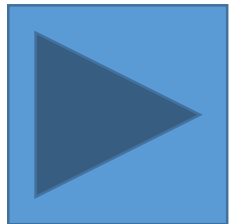
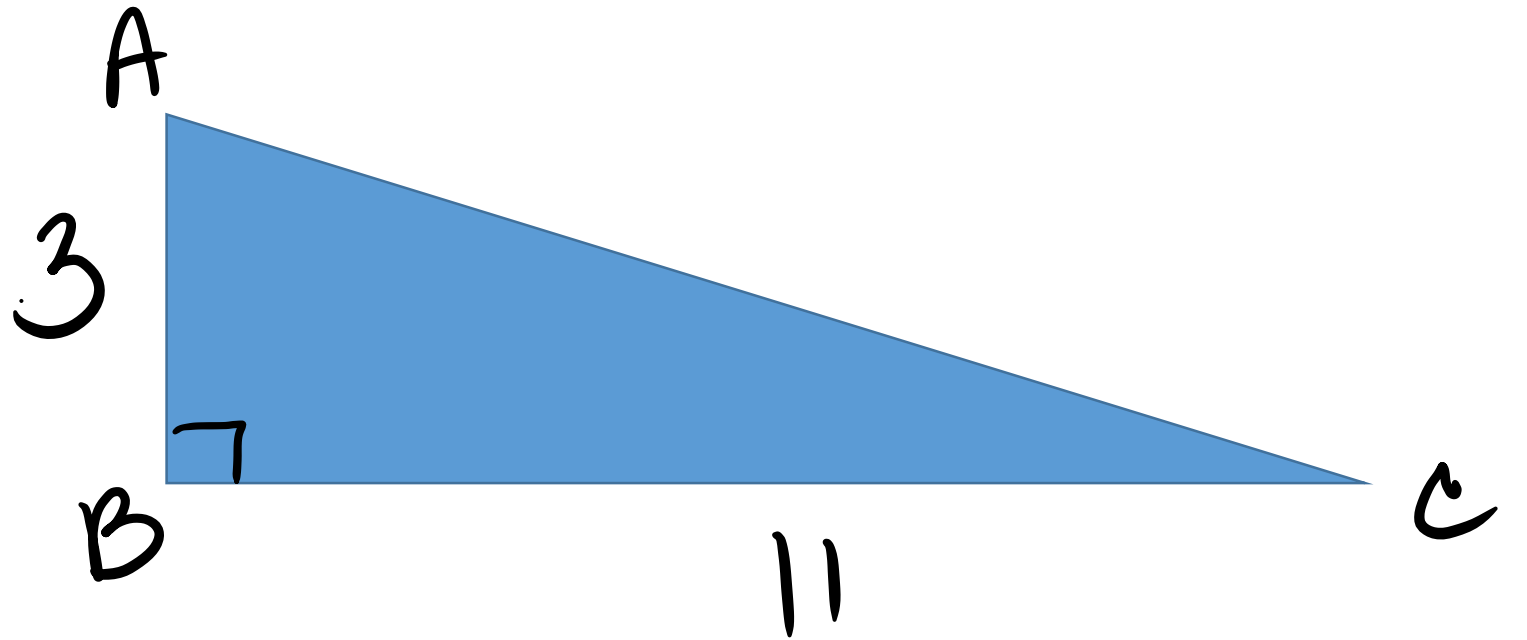
#24 answer

$\angle A$ is the 90° angle - it can't be the reference angle so $\sin A$ can't be determined?



#25

Solve:



#25 answer

∠A

$$\tan A = \frac{11}{3}$$

$$A \doteq 75^\circ$$

∠C

$$\tan C = \frac{3}{11}$$

$$C \doteq 15^\circ$$

side b

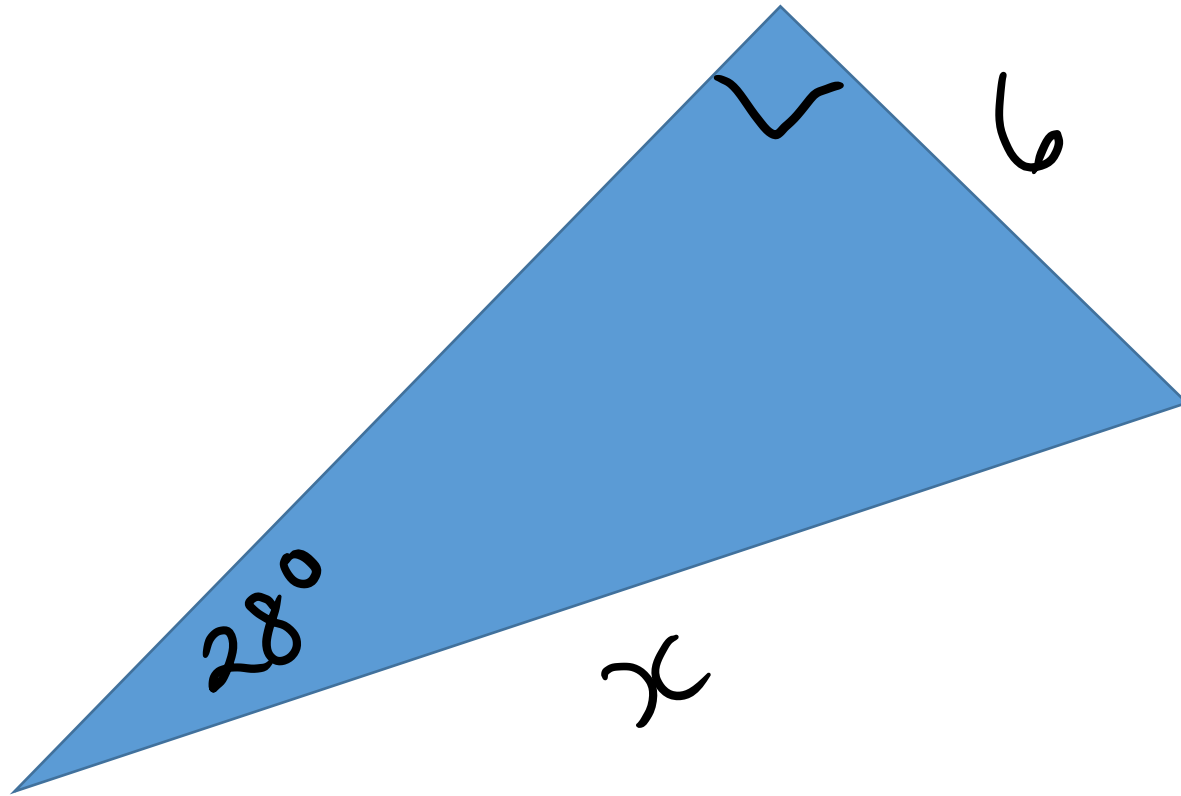
$$3^2 + 11^2 = b^2$$

$$b = \sqrt{130}$$

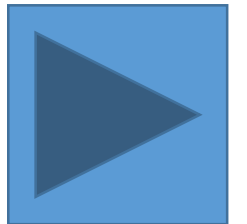
$$b \doteq 11.4 \text{ units}$$



#26

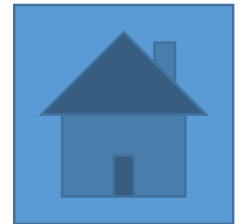


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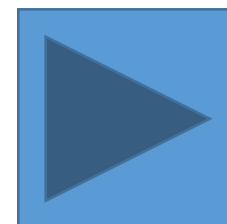
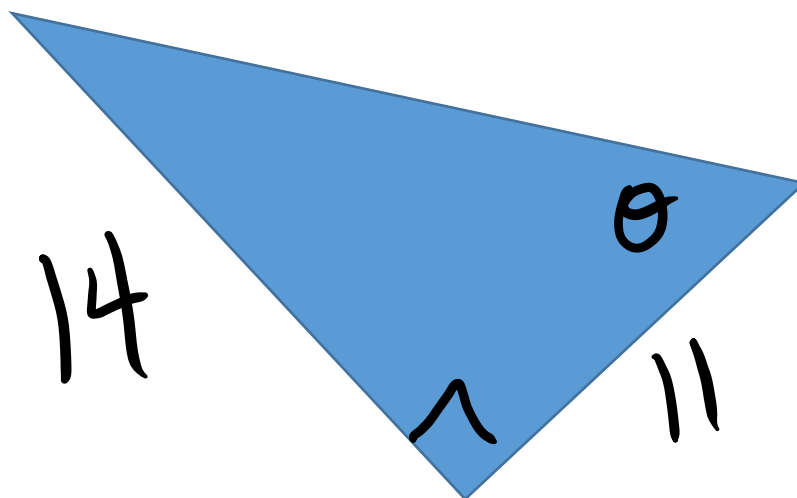


#26 answer

$$x \dot{=} 12.8 \text{ units}$$



#27



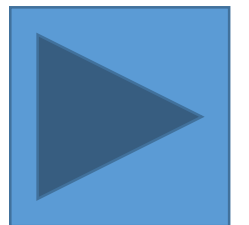
#27 answer

$$\theta = 52^\circ$$



#28

**A triangle has sides of 43° , 90° and 47° .
If the sides are 20 cm, 18.7 cm and 13.6 cm,
draw and label the triangle.**



#28 answer

