Pre-Calculus Quiz 6 version 1

name:

1. 180°

is equivalent to

A $\frac{3\pi}{2}$

B π

C 360°

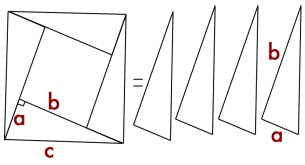
none of these

2. The Pythagorean Theorem

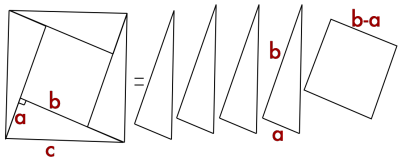
A helps solve a third side of a right triangle, when two are known

B helps check if a triangle is an isosceles triangle

3. ideas that help prove the pythagorean theorem



A



B

C none of these

4. 180°

is equivalent to

A π radians

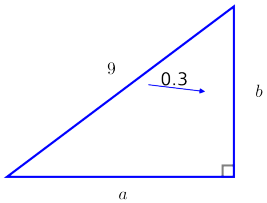
B -2π radians

C $\frac{-\pi}{2}$

5. Suppose instead of the usual degrees, a new degree was invented, obtained by cutting the circle in 100 equal slices, then calling each one of these slices a 'one -new-degree' unit of measurement. Then how many new-degrees would $\pi\, rad$ be equivalent to ?

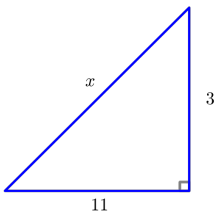
A 90 new-degrees B 45 new-degrees C 150 new-degrees D 100 new-degrees E 180 new-degrees F 50 new-degrees G 1000 new-degrees H none of these

6. consider the sides and ratio given below:



A $a \approx 7.07$ B $b \approx 2.214$ C $a \approx 8.585$ D $b \approx 2.435$ E $a \approx 6.095$ F $b \approx 2.7$ G none of these

7.



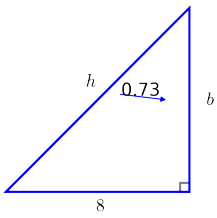
A $x = \pm\sqrt{3^2 + 11^2}$

B $x^2 = 3^2 + 11^2$

C $x = \pm\sqrt{3^2} \pm \sqrt{11^2}$

D $x^2 = 3^2 - 11^2$

8. consider the sides and ratio given below:



A $b \approx 8.545$ B $b \approx 7.49$ C not enough information D $b \approx 9.827$ E $h \approx 10.959$ F $h \approx 10.769$ G $h \approx 11.705$ H none of these

9. Suppose the earth is shaped as a sphere with radius $4,000$ miles and suppose it rotates once every 24 hours. How many miles along the equator does it rotate each hour? (approximation is acceptable)

A

$\frac{24}{2\pi}\, mi$

B

$\frac{12}{\pi}\, mi$

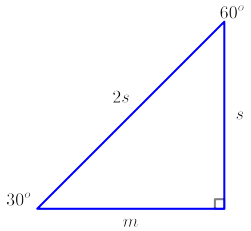
C

$\frac{24}{\pi}\, mi$

D

$1047.19755\, mi$

10. Assume h, m, and s are positive and h is the hypothenuse. What can be said about the following:



A $4s^2 = s^2 + m^2$ B $3h^2 = m^2$ C $h\sqrt{3} = m$ D $s\sqrt{3} = m$ E $(2s)^2 = s^2 - m^2$ F $3s^2 = m^2$

11.

$90°$

is equivalent to

A

$\frac{3\pi}{2}$

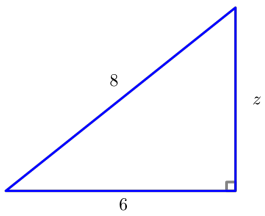
B

$\frac{-\pi}{2}$

C

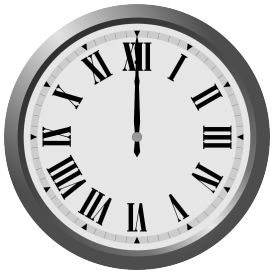
$\frac{\pi}{2}$

12.



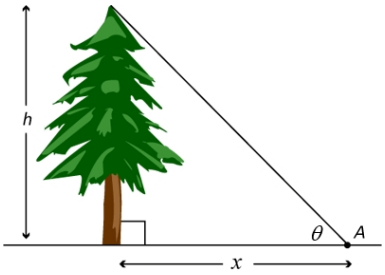
A $8^2 = z^2 + 6^2$ B $z = \pm\sqrt{8^2 - 6^2}$ C $z = \pm 8 \pm 6^2$
D none of these

13. At 12:00 o'clock the minute and the hour hand point exactly in the same direction. As time goes on after this when will the two hands meet again?



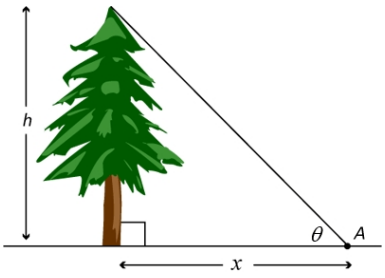
A they will meet again at exactly at 1:05
B they will meet again at exactly at 1:05:30
C they will meet again at exactly at 3:15
D they will meet again at exactly at 2:10
E they will meet again at exactly at 1:06
F none of these

14. Suppose you look at a tree from afar and note the angle of elevation is 45^o. From that point, after walking 16 feet away from the tree, you note the angle of elevation decreased to 30^o. Estimate how far away from the tree you were [x on diagram below], before yo moved 16 feet away. [do not use ideas from future part of the course].



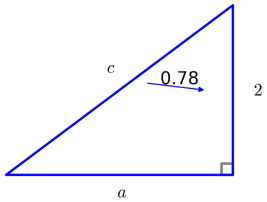
A 21.856 ft B none of these

15. Suppose you look at a tree from afar and note the angle of elevation is 45^o. From that point, after walking 23 feet away from the tree, you note the angle of elevation decreased to 30^o. Estimate the height of the tree [h on diagram below, and do not use ideas from future part of the course].



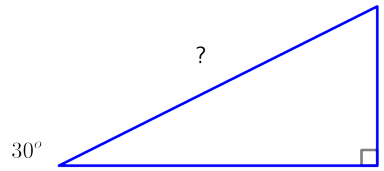
A 31.419 ft B 29.111 ft C 37.395 ft
D none of these

16. consider the sides and ratio given below:



A $c \times 0.78 = 2$ B $2 = c \div 0.78$ C none of these

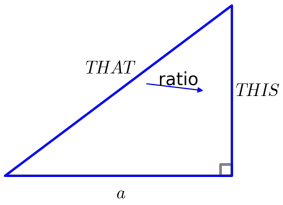
17. Identify the side



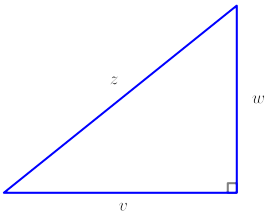
A hypothenuse B medium C small

18. consider the sides and ratio given below:

A $THAT \times ratio = THIS$ B $THIS \div ratio = THAT$ C none of these



19. Pythagorean Theorem Says



A $z^3 = v^3 + w^3$ B $z^2 = v^2 + w^2$

20. Estimate the angle measurement.

A

300°

B

120°

C

150°

21. Supplemental angles are

A pairs of angles where their measurement sum is 180^o

B pairs of angles where their measurement sum is π

C pairs of angles where their measurement sum is $\frac{\pi}{2}$

D pairs of angles where their measurement sum is 90^o

E none of these

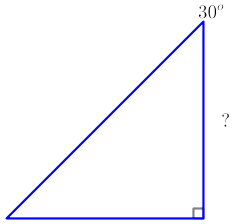
22. The Pythagorean Theorem

A helps solve a third side of a right triangle, when two are known

B none of these

23.

Identify the side



A medium B hypothenuse C small

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24. Suppose the figure below represents a half circle with a triangle inscribed where one of the triangle corners touches the half-circle at some random unknown point, as shown. Using your excellent algebraic and geometric skills, what can be deduced about the angle P?

A really nothing B nothing C angle P must be 90^o D utterly nothing E must be 45^o

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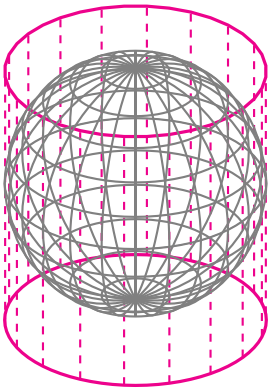
25. Compare the surface area of a sphere and the outer area of the upright cylinder inscribing it. Which is larger?



A the cylinder has more lateral area

B they have the same area

C the sphere has more surface area

D none of these

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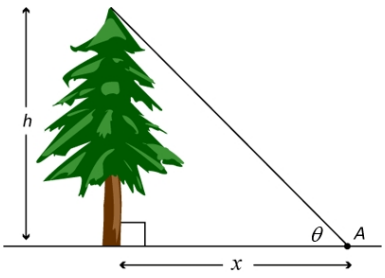
26. Suppose you look at a tree from afar and note the angle of elevation is 45^o. From that point, after walking 10 feet away from the tree, you note the angle of elevation decreased to 30^o. Estimate the height of the tree [h on diagram below, and do not use ideas from future part of the course].



A 16.259 ft B 54.25 ft C 13.660 ft D none of these

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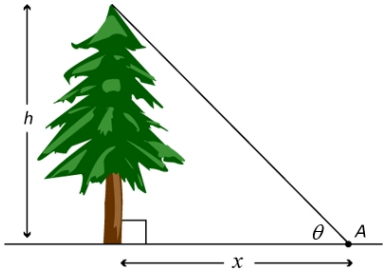
27. Suppose you look at a tree from afar and note the angle of elevation is 45^o. From that point, after walking c feet away from the tree, you note the angle of elevation decreased to 30^o. Estimate the height of the tree h [do not use ideas from future part of the course].



A $\sqrt{3}/2 * c - c$ ft

B $h = \frac{1}{2}\, c(\sqrt{3}+1)$ ft

C $\sqrt{3}/2 * c + 1$ ft

D $\sqrt{3}/2 * c + c$ ft

28.

$180°$

is equivalent to

A

$-\pi$

B

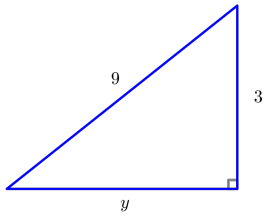
π radians

C

$360°$

none of these

29.



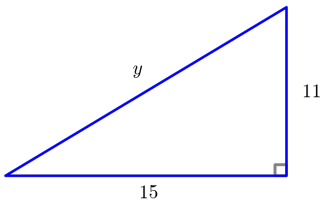
A $y = \pm\sqrt{3^2} \pm \sqrt{9^2}$

B $9^2 = 3^2 + y^2$

C $y = 9 + 3$

D $y = \pm\sqrt{9^2 - 3^2}$

30.



A $y = \pm 11 \pm 15^2$

B $y^4 = 15^4 + 11^4$

C $y = \pm\sqrt{11^2 + 15^2}$

D $y^2 = 11^2 + 15^2$