

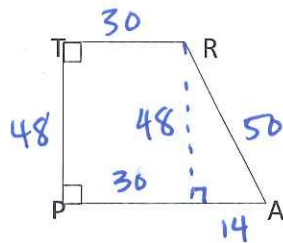
KEY

Ms. Becker
6/14/16

HONORS GEOMETRY SEMESTER 2 PRACTICE FINAL EXAM

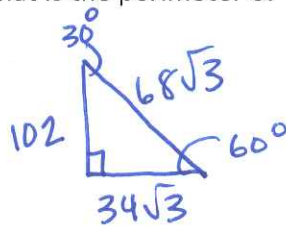
1. In trapezoid $TRAP$, $PA = 44$, $TR = 30$, and $TP = 48$. Find RA .

- a. 50
b. 48
c. 28
d. $14\sqrt{3}$
e. $14\sqrt{2}$



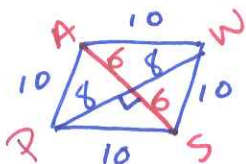
2. If the altitude of an equilateral triangle measures 102 cm., what is the perimeter of the triangle?

- a. $68\sqrt{3}$ cm.
b. $34\sqrt{3}$ cm.
c. $612\sqrt{2}$ cm.
d. $204\sqrt{3}$ cm.
e. $612\sqrt{3}$ cm.

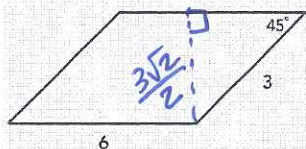


3. In rhombus $PAWS$, $PW = 16$ cm. and $SA = 12$ cm. Find the perimeter of $PAWS$.

- a. 24 cm.
b. 40 cm.
c. 48 cm.
d. 96 cm.
e. 100 cm.



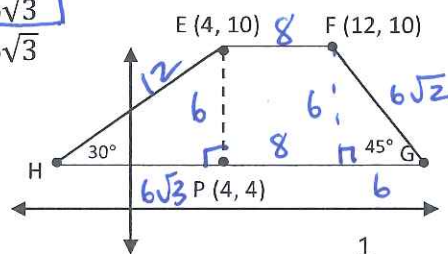
4. Find the area of the parallelogram.



- a. 9 cm^2
b. 18 cm^2
c. $9\sqrt{2} \text{ cm}^2$
d. $9\sqrt{3} \text{ cm}^2$
e. $18\sqrt{2} \text{ cm}^2$

5. Find the perimeter of trapezoid $EFGH$.

- a. $34 + 6\sqrt{2} + 6\sqrt{3}$
b. $46 + 6\sqrt{2} + 6\sqrt{3}$
c. $66 + 18\sqrt{3}$
d. $28 + 20\sqrt{2}$
e. $46 + 6\sqrt{6}$



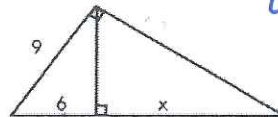
6. Solve for x .

- a. 13.5
b. 54
c. 7.5
d. 24
e. 9

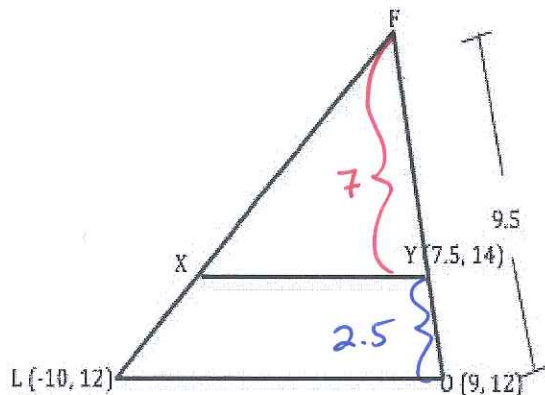
$$9^2 = 6(6+x)$$

$$9^2 = 36 + 6x$$

$$45 = 6x$$



Use the below diagram for the following two questions.



$$\sqrt{2^2 + 1.5^2}$$

$$= 2.5$$

7. What is the length of YO ?

- a. 2 units
b. 1.5 units
c. 3 units
d. 1 unit
e. 2.5 units

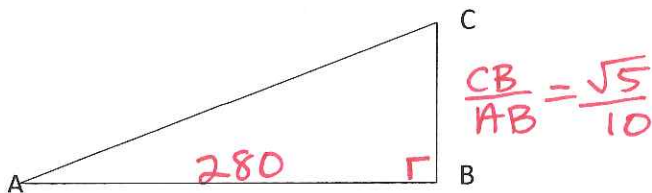
8. If $\overline{XY} \parallel \overline{LO}$, what is the length of XY ?

- a. 7 units
b. 14 units
c. 15 units
d. 16 units
e. Not enough info

$$\frac{7}{xy} = \frac{9.5}{19}$$

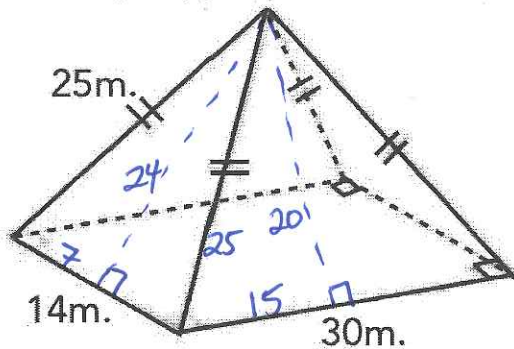
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9. If $AB = 280$, $m\angle B = 90^\circ$, and $\tan \angle A = \frac{\sqrt{5}}{10}$, find the lengths of the other two sides of the triangle below.



- a. $BC = 28\sqrt{5}$; $AC = 28\sqrt{105}$
 b. $BC = 56\sqrt{5}$; $AC = 56\sqrt{105}$
 c. $BC = 14\sqrt{5}$; $AC = 28\sqrt{105}$
 d. $BC = 28\sqrt{5}$; $AC = 560\sqrt{5}$
 e. $BC = 56\sqrt{5}$; $AC = 560\sqrt{5}$

10. Find the total surface area of the rectangular pyramid below.



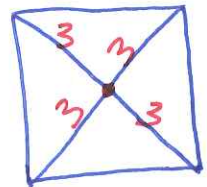
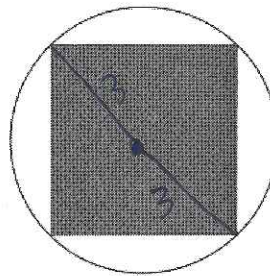
- a. 616 m.
 b. 2940 m.
 c. 1620 m.
 d. 1118 m.
 e. 638 m.

F. none of the above (sorry, my bad!)

11. The point $(6, 5)$ lies on a circle. What is the length of the radius of this circle if the center is located at $(3, 2)$?

- a. $3\sqrt{2}$
 b. $2\sqrt{3}$
 c. 6
 d. 9
 e. 18

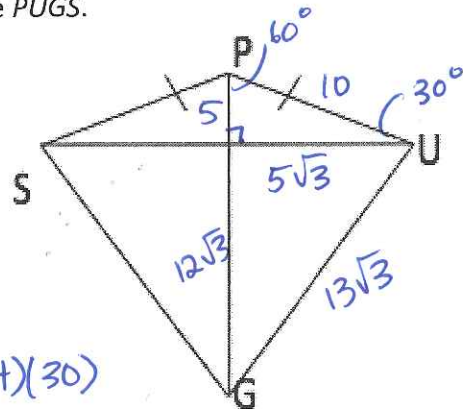
12. A circle with a radius of 3 cm. is circumscribed about a square. Find the area of the square.



- a. $9\sqrt{2} \text{ cm.}^2$
 b. $12\sqrt{2} \text{ cm.}^2$
 c. $24\sqrt{2} \text{ cm.}^2$
 d. 18 cm.^2
 e. 36 cm.^2

Handwritten calculation:
 $\frac{1}{2} d_1 \cdot d_2$
 $= \frac{1}{2} \cdot 6 \cdot 6$
 $= 18$

13. In kite $PUGS$, $UP = 10$, $UG = 13\sqrt{3}$, and $\angle SPU = 120^\circ$. Find the area of kite $PUGS$.



- a. $360 + 50\sqrt{3}$
 b. $180 + 25\sqrt{3}$
 c. $60\sqrt{3} + 50\sqrt{6}$
 d. $180 + 50\sqrt{3}$
 e. $60\sqrt{3} + 25\sqrt{6}$

14. According to the rules of the International Table Tennis Federation, a ping pong ball must have a surface area of $1600\pi \text{ mm.}^2$ (true story). What is the radius of a ping pong ball?

- a. $400\pi \text{ mm.}$
 b. 400 mm.
 c. $20\pi \text{ mm.}$
 d. 20 mm.
 e. None of the above

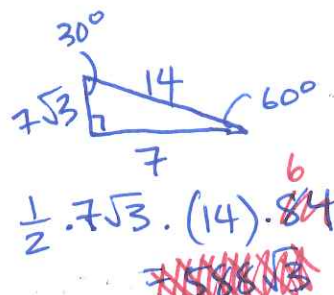
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15. If each side of a regular hexagon is 14 in. long, what is the hexagon's area?

- a. $42\sqrt{3} \text{ in.}^2$
b. $49\sqrt{3} \text{ in.}^2$
c. $98\sqrt{3} \text{ in.}^2$

d. $294\sqrt{3} \text{ in.}^2$

e. $588\sqrt{3} \text{ in.}^2$



For the following 6 questions, consider the equation: $x^2 + 6x + y^2 - 4y = 5$. $+9 + 4$

16. What is the radius of the circle?

a. $\sqrt{5}$

b. 5

c. 25

d. $2\sqrt{3}$

e. $3\sqrt{2}$

$$(x+3)^2 + (y-2)^2 = 18$$

17. What is the center of the circle?

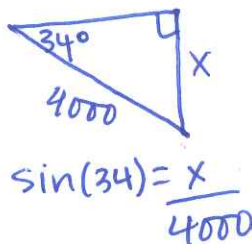
a. $(-6, 4)$

b. $(6, -4)$

c. $(-3, -4)$

d. $(3, -2)$

e. $(-3, 2)$



18. What is the area of the circle?

a. $5\sqrt{2}\pi$

b. $6\sqrt{2}\pi$

c. 18π

d. 25π

e. 36π

19. What is the circumference of the circle?

a. $5\sqrt{2}\pi$

b. $6\sqrt{2}\pi$

c. 18π

d. 25π

e. 36π

20. What is an equation of the tangent to the circle at point $(0, 5)$?

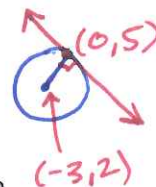
a. $y = -x + 5$

b. $y = x - 5$

c. $y = -\frac{1}{3}x + 5$

d. $y = -3x + 5$

e. None of the above



21. What is the area of a sector of this circle with a central angle of 45° ?

a. 0.625π

b. 1.125π

c. 2.25π

d. 3.125π

e. 4.5π

$$\frac{18\pi}{8}$$

22. The sonar of a navy cruiser detects a submarine that is 4,000 ft from the cruiser. The angle of depression is 34° . Approximately how far below the surface is the sub?

a. 2,236.8 ft.

b. 2,698.0 ft.

c. 3,316.2 ft.

d. 4,824.9 ft.

e. 7,153.2 ft.

23. Given Circle A, find $m\widehat{FB}$

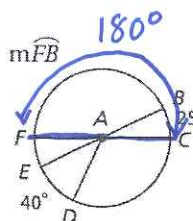
a. 45°

b. 205°

c. 180°

d. 155°

e. 32.5°



24. What is the area of the shaded sector in Circle K?

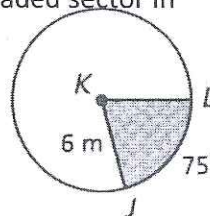
a. $\frac{15\pi}{2} \text{ m}^2$

b. $\frac{5\pi}{2} \text{ m}^2$

c. $\frac{5\pi}{4} \text{ m}^2$

d. $9\pi \text{ m}^2$

e. $27\pi \text{ m}^2$

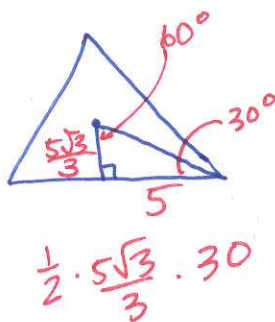


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25. What is the area of an equilateral triangle with

an apothem of $\frac{5\sqrt{3}}{3}$?

- a. $\frac{25\sqrt{3}}{3} \text{ units}^2$
- b. 25 units^2
- c. $25\sqrt{3} \text{ units}^2$
- d. $\frac{25}{6} \text{ units}^2$
- e. None of the above

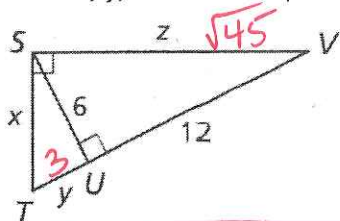


30. What is the name of a regular polygon in which each interior angle measure is 135° ?

- a. heptagon
- b. octagon
- c. nonagon
- d. decagon
- e. dodecagon

31. (oops)

26. Find x , y , and z in simplest form.



- a. $x = 3\sqrt{5}$, $y = 3$, $z = 6\sqrt{5}$
- b. $x = 3\sqrt{5}$, $y = 3$, $z = \sqrt{180}$
- c. $x = \sqrt{45}$, $y = 3$, $z = 3\sqrt{20}$
- d. $x = \sqrt{45}$, $y = 3$, $z = 6\sqrt{5}$
- e. None of the above

27. The ratio of the side lengths of a quadrilateral is $2 : 4 : 5 : 6$ and its perimeter is 85 inches. What is the length of the second shortest side?

- a. 20
- b. 18
- c. 17
- d. 10
- e. 5

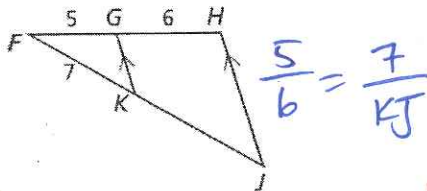
$$2x + 4x + 5x + 6x = 85$$

$$17x = 85$$

$$x = 5$$

28. Find KJ .

- a. 5
- b. 7.4
- c. 7.6
- d. 8
- e. 8.4



$$\frac{5}{6} = \frac{7}{KJ}$$

$$\tan^{-1}\left(\frac{3.8}{2.5}\right)$$

29. What is the measure of each interior angle of a regular decagon?

- a. 120°
- b. 150°
- c. 1440°
- d. 144°
- e. 1800°

32. Find the $m\angle M$ in parallelogram MNOP.

- a. 5°
- b. 103°
- c. 90°
- d. 77°
- e. 23°

$$3x + 8 = 6x - 7$$

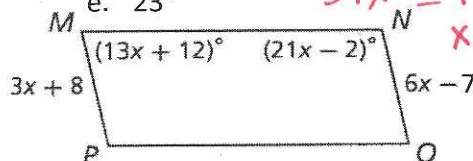
$$15 = 3x$$

$$x = 5$$

$$13x + 12 + 21x - 2 = 180$$

$$34x = 170$$

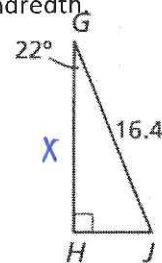
$$x = 5$$



33. Find GH to the nearest hundredth.

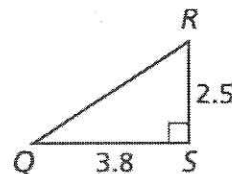
- a. 6.14
- b. 15.21
- c. 6.63
- d. 22.00
- e. 17.69

$$\cos(22^\circ) = \frac{x}{16.4}$$



34. Find $m\angle R$ to the nearest tenth.

- a. 1.5°
- b. 56.7°
- c. 39.9°
- d. 4.5°
- e. 33.3°



35. Find the lateral surface area of the cone.

- a. $136\pi \text{ cm}^2$
- b. $200\pi \text{ cm}^2$
- c. $120\pi \text{ cm}^2$
- d. $150\pi \text{ cm}^2$
- e. $184\pi \text{ cm}^2$

