A- 22↑ B-20↑ C-17↑ D-15 F-14↓ /24

Honors Geometry
Unit 3 Supplement Review Sheet

Name: Answer Key

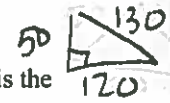
1. The length of a diagonal of a square is 12. Find the area of the square.

$m = \frac{12\sqrt{2}}{2} = 6\sqrt{2}$

$A = (6\sqrt{2})(6\sqrt{2}) = \boxed{72u^2}$

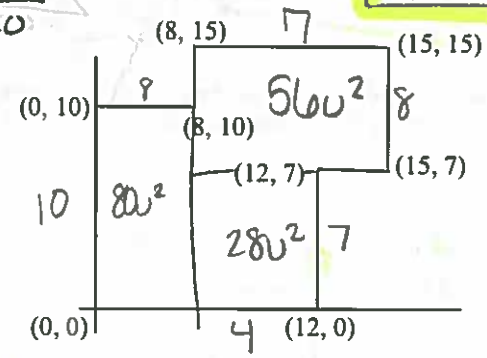
2. What is the area of a triangle with sides of lengths 50, 120, 130?

Recognize that its a right Δ



$\frac{1}{2}(50)(120) = \boxed{3000u^2}$

3. A floor plan of a house is given at the right. What is the area of the floor if each unit is one foot?



$56 + 80 + 28 = \boxed{164ft^2}$

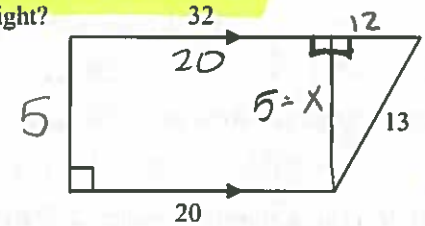
rotations

4. $\overline{XY}$ has the endpoints X(−5, 6) and Y(0, 4). Find the image of $\overline{XY}$ under a rotation of 270° about the origin.

$X'(+6, +5)$ $Y'(+4, 0)$

If we went counter clockwise 90° – clockwise

5. What is the area of the trapezoid at the right?



$5(20) + \frac{1}{2}(5)(12)$

$100 + 30$

$\boxed{130u^2}$

$12^2 + x^2 = 13^2$

$x^2 = 25$

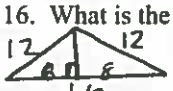
$x = 5$

6. Could 4, 7, and 9 be the lengths of the sides of a right triangle?

$4^2 + 7^2 \stackrel{?}{=} 9^2$

$65 \neq 81$ $\boxed{NO}$

7. A triangle has sides of 12, 12, and 16. What is the area of the triangle?



$8^2 + x^2 = 12^2$

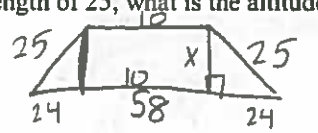
$x^2 = 80$

$x = 4\sqrt{5}$

$\frac{1}{2}(4\sqrt{5})8 \times 2$

$\boxed{32\sqrt{5}u^2}$

8. The bases of an isosceles trapezoid are 10 and 58. If each leg has a length of 25, what is the altitude of the trapezoid?



$24^2 + x^2 = 25^2$

$x^2 = 49$

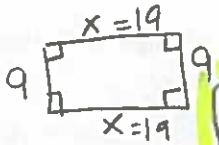
$\boxed{x = 7}$

9. What is the area of a square with a diagonal of $8\sqrt{2}$?

$8 \cdot 8 = \boxed{64u^2}$

10. One side of a rectangle is 9 and the perimeter is 56. What is the area?

$38 = 2x$ $x = 19$



$A = 9(19) = \boxed{171u^2}$

11. $AE = 8$, $AC = 14$, $BD = 12$. Find the length of BC. $\angle BDC$ is a right angle.

Compare the Areas

$A = \frac{1}{2}bh$

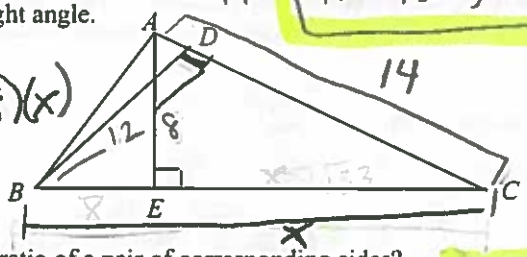
$A = \frac{1}{2}(12)(14)$

$A = 84$

$A = \frac{1}{2}(8)(x)$

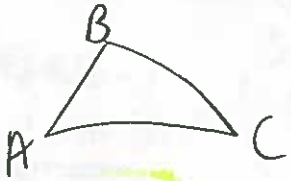
$A = 4x$

$84 = 4x$ $x = 21$



$\boxed{BC = 21}$

12. Two similar triangles have perimeters of 48 and 28. What is the ratio of a pair of corresponding sides?



$\frac{48}{28} = \boxed{\frac{12}{7}}$

Similar Δ's

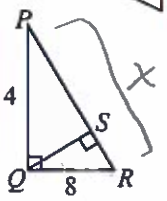
13. If $\overline{WV} \parallel \overline{KT}$ what is the length of WV?

Shade large $\frac{24}{24+9} = \frac{x}{22}$

$33x = 528$

$\boxed{x = 16}$

14. If $QR = 8$ and $PQ = 14$, find the length of PR.



$8^2 + 14^2 = x^2$

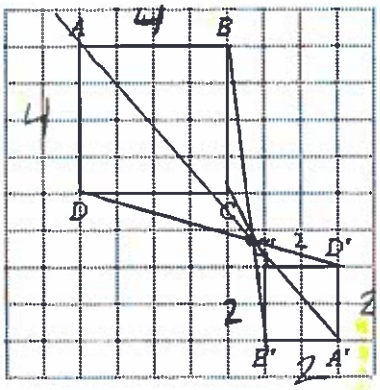
$64 + 196 = x^2$

$260 = x^2$

$\boxed{x = 2\sqrt{65}}$

260
26 10
2 13 2 5

15. Determine the scale factor of the dilation and then determine whether the dilation is an enlargement, reduction or isometry dilation.



Reduction

Scale factor $\boxed{\frac{1}{2}}$

16. A figure M is reflected in two parallel lines that are 3 inches apart. What single transformation maps M onto M''?

Translation : Distance translated = 6 inches

17. A figure R is reflected in two intersecting lines that intersect at a 60° angle. What single transformation maps R onto R''?

Rotation : Angle of rotation 120°

18. ΔABC has vertices $A(1, 3)$, $B(-2, -1)$ and $C(3, -2)$. If ΔABC is translated along $\langle 2, 0 \rangle$ and then reflected in the y-axis. Find the coordinates of the vertices of $\Delta A'B'C'$.

$A'(3,3)$ $B'(0,-1)$ $C'(5,-2)$

want the composition → $\boxed{A''(-3,3)\ B''(0,-1)\ C''(-5,-2)}$

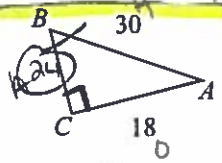
19. $\overline{RS}$ has endpoints $R(2, -1)$ and $S(6, -5)$. Find the coordinates of the image after a rotation of 90° about the origin and then a translation along $\langle 4, -2 \rangle$.

↳ counter clockwise

$R'(+1, +2)$ $S'(+5, +6)$

$\boxed{R''(5, 0)\ S''(9, 4)}$

20. In the right triangle, what is cos B?



$x^2 + 18^2 = 30^2$

$x^2 = 576$

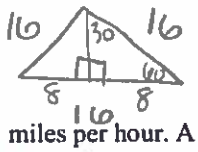
$x = 24$

SOH CAH TOA

$\cos B = \frac{24}{30} = \boxed{\frac{4}{5}}$

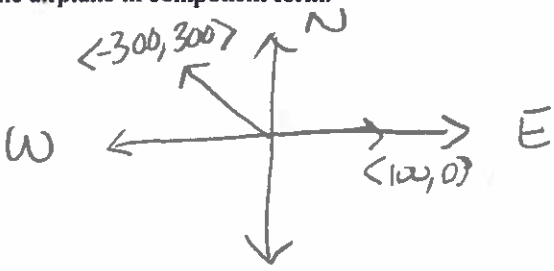
21. ΔPQR is equilateral. The perimeter of ΔPQR is 48, find the altitude.

30-60-90 Triangle



$\boxed{8\sqrt{3}}$

22. An airplane is flying northwest. Its velocity is represented by $\langle -300, 300 \rangle$ miles per hour. A wind is blowing from the west and its velocity is represented by $\langle 100, 0 \rangle$ miles per hour. Find the resultant vector for the airplane in component form.

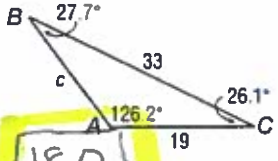


add

$\langle -300, 300 \rangle$
$\langle 100, 0 \rangle$

$\boxed{\langle -200, 300 \rangle}$

23. Find c to the nearest tenth.

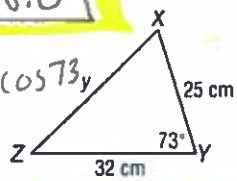


law of sines

$\frac{\sin 26.1}{c} = \frac{\sin 27.7}{19}$

$c = 17.982 \approx \boxed{18.0}$

24. Find y to the nearest centimeter.



law of cosines

$y^2 = 32^2 + 25^2 - 2(32)(25)\cos 73$

$y^2 = 1181.205$

$y = 34.368 \approx \boxed{34\text{cm}}$