

**SHOW WORK ON EACH PROBLEM!
EACH ANSWER SHOULD BE FULLY SIMPLIFIED**

****All concepts on this worksheet are prerequisite knowledge from middle school math and Algebra. You are expected to know them without review the first day of class.**

****You should bring this completed worksheet with you the first day of class. If you should need another copy, you can find it on the Westlake High Website. There may be a quiz on this material the first week of classes.**

**** Show all work.**

I. A Pre AP Geometry student should be able to simplify expressions.

1) $5 + (16 + 2) \div 3$

2) $-4 - (1 - 5) - (-4)^2$

3) $(4 - 3)(1 - (3 + 5)) \times 5$

Answer:

Answer:

Answer:

4) $4a - 2(b + a) - (3b)^2$

5) $2 - (3x + 5) - 4^2 + x$

6) $[2 - 4(n^2 - n)] \div (2n + 1)$

Answer:

Answer:

Answer:

II. A Pre AP Geometry student should be able to simplify radical expressions.

1) $3\sqrt{6} - 4\sqrt{6}$

2) $-2\sqrt{3} + 3\sqrt{27}$

3) $3\sqrt{18} - 2\sqrt{2}$

Answer:

Answer:

Answer:

4) $\sqrt{24x^2y^5z^6}$

5) $\sqrt{3}(\sqrt{15} + \sqrt{20})$

6) $\sqrt{\frac{490}{10}}$

Answer:

Answer:

Answer:

III. A Pre AP Geometry student should be able to factor quadratics, completely.

1) $2p^2 + 2p - 4$

2) $n^2 - 11n + 10$

3) $9k^2 + 66k + 21$

Answer:

Answer:

Answer:

4) $6x^2 - 4x - 8$

5) $9r^2 - 48r + 64$

6) $5m^2 - \frac{5}{4}$

Answer:

Answer:

Answer:

IV. A Pre AP Geometry student should be able to solve equations, showing each step.

1) $-20 = -4x - 6x$

2) $8p - 5(p + 3) = (7p - 1)3$

3) $p - 1 = 5p + 3p - 8$

Answer:

Answer:

Answer:

4) $2x^2 + 5x + 3 = 0$

5) $3x^2 + 2x = 5$

6) $x^2 - 6x = 2$

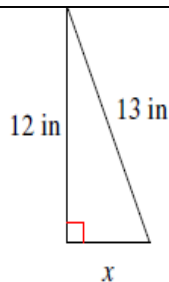
Answer:

Answer:

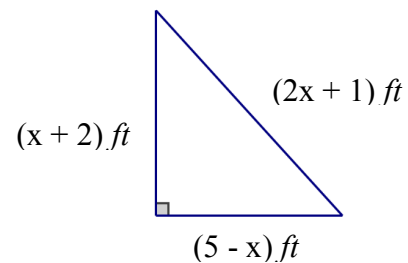
Answer:

V. A Pre AP Geometry student should be able to use Pythagorean theorem on right triangles. He/she should also be able to give answers as simplified radical expressions or rounded numbers.

1) X =



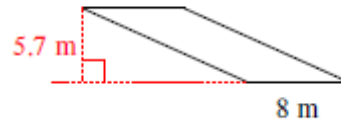
2) X =



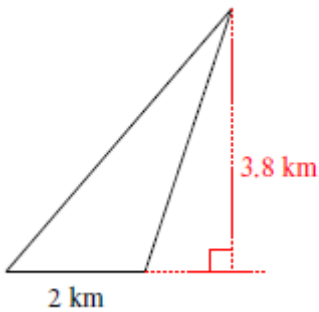
VI. A Pre AP Geometry student should be able to find the area of simple polygons, showing each step.



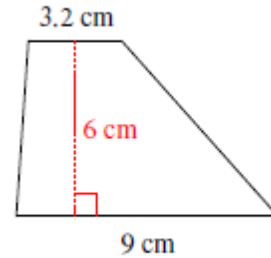
1) Area=



2) Area=



3) Area=



4) Area=

VII. A Pre AP Geometry student should be able to find the slope between any two points.

1) (0.5, -0.7) and (0.4, 1.2)

2) (-3,2) and (-3, 7)

3) $(\frac{7}{2}, \frac{3}{4})$ and $(\frac{9}{2}, \frac{1}{8})$

Slope:

Slope:

Slope:

VIII. A Pre AP Geometry student should be able to write the equation of the line between a set of points. Write your equation in slope-intercept form ($y=mx+b$).

1) $(-3,7)$ and $(1,3)$

2) $(7,-4)$ and $(-3,-1)$

Equation:

Equation:

IX. A Pre AP Geometry student should be able to find the slope of a line given the equation for the line.

1) $y = 3x + 2$

2) $x + y = 2$

3) $2x + 2y = 4$

Slope:

Slope:

Slope:

X. A Pre AP Geometry student should be able to find the slope of the line perpendicular and parallel to a line whose equation is given.

1) $y = \frac{2}{3}x + 3$

2) $3x + 4y = 8$

3) $7x + 3y = 14$

|| Slope:
⊥ Slope:

|| Slope:
⊥ Slope:

|| Slope:
⊥ Slope:

XI. A Pre AP Geometry student should be able to solve systems of equations.

1) $\begin{cases} 4x - 2y = -14 \\ 3x - y = -8 \end{cases}$

2) $\begin{cases} x - 3y = -4 \\ 2x + 6y = 5 \end{cases}$

3) $\begin{cases} \frac{x}{3} - y = 3 \\ 2x + y = 25 \end{cases}$

Solution:

Solution:

Solution:

- XII. A Pre AP Geometry student should be able to define a variable, write and solve an equation to find missing geometric dimensions.
- 1) One of the angles of a triangle measures 35 degrees. Another angle measures 108 degrees. What is the measure of the third angle?
 - 2) The perimeter of a rectangle is 24 inches. Find the dimensions if its length is 3 inches greater than its width.
 - 3) The sides of a scalene triangle have measures that are consecutive even integers. If the perimeter of this triangle is 60 inches, what is the length of the longest side of the triangle?
 - 4) An isosceles trapezoid and a right triangle have the exact same area. The height of the trapezoid is unknown. The first base measures one unit more than the height and the second base measures twice the height. The triangle's height is also unknown, but it happens to be 4 times the height of the trapezoid. The base of the triangle is 5 units less than the second base of the trapezoid. Find the height of the triangle.
 - 5) Part of the set for a play is a triangular piece of plywood. The area of the triangle is 22 square feet. The base is 3 feet longer than the height. What is the height of the triangle? Round your answer to the nearest tenth of a foot.
 - 6) Cathy is going to frame a portrait of the family and place it on the mantle in the family room. The portrait is 10 inches longer than it is tall and will take up a total area of 1344 square inches once it is inside the 2 inch thick frame. Find the dimensions and area of the unframed portrait.