Unit 10: Trigonometry & analytic geometry Name:
16 March 2020

10.6 Classwork: Linear equations, review

1. Write down the slope perpendicular to the given slope.

   (a) $m = \frac{1}{3}$ $m_\perp =$

   (b) $m = -0.8$ $m_\perp =$

2. Write down the center and radius of each circle. Simplify radicals.

   (a) $(x+1)^2 + (y+5)^2 = 49$

   (b) $(x+1)^2 + y^2 = 50$

   (c) $x^2 + 4x + y^2 - 6y = -9$

   (d) $x^2 + y^2 - 8x = 75$

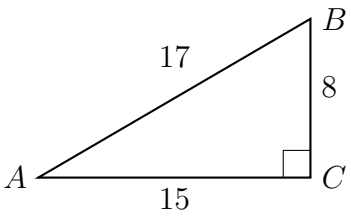
   In the following problems, use the point-slope formula: $y - y_1 = m(x - x_1)$

3. What is the equation of a line through $(3, -4)$ parallel to the line $y = \frac{3}{2}x - 6$?

4. What is the equation of a line through $(-7, 10)$ perpendicular to the line $4x + 6y = 12$?

5. What is an equation of the perpendicular bisector of $\overline{AB}$ with $A(-2, -7)$ and $B(4, 5)$?

6. $\triangle ABC$ is shown with $m\angle C = 90°$ and the lengths of the triangle's sides are $BC = 8$, $AC = 15$, and $AB = 17$. (not drawn to scale)

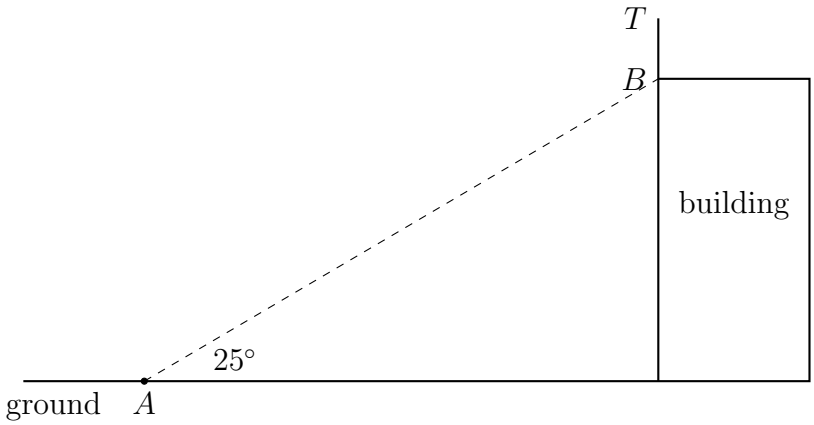


(a) Write down the value of $\tan A$.

(b) Find the measure of $\angle A$.

7. The following diagram shows a pole BT 1.6 m tall on the roof of a vertical building.

The angle of elevation of the top of the building from A is 25° and the distance from point A to the building is 40 feet. (not drawn to scale)



Find the height of the building to the *nearest foot*.