10.11 Do Now: Algebra, slope, & review

1. Solve for the value of x.

   $\frac{1}{5}(2x + 3) = 1$

2. Given $f(x) = \frac{1}{4}x + 4$. Solve for x such that for $f(x) = 6$.

3. Given $g(x) = 3x^2 - 7x + 5$. Simplify $g(0)$.

4. Given $f(x) = 5x - 22$. Solve for x such that for $f(x) = 3$.

5. Given $h(x) = x^2 + 6x + 5$. Solve $h(x) = 0$.

6. A translation maps $A(3,5) \to A'(-2,7)$. What is the image of $B(-4,1)$ under the same translation?

7. The line l has the equation $y = -\frac{3}{5}x + 4$. To each line below, circle whether l is parallel, perpendicular, or neither.

    (a) parallel   perpendicular   neither $y = \frac{3}{5}x - 2$
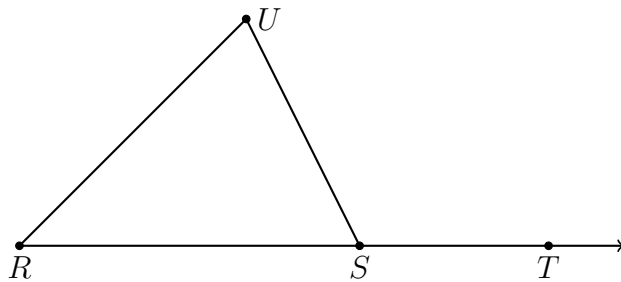
    (b) parallel   perpendicular   neither $3x - 5y = -15$

8. Simplify each expression. (Leave it in radical form if necessary, not a decimal.)

    (a) $\sqrt{20}$ (b) $\sqrt{\frac{16}{49}}$

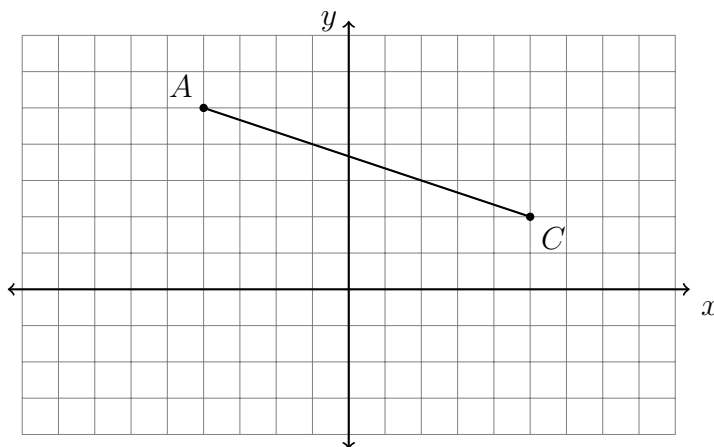9. Given $m\angle R = 40$ and $m\angle U = 80$. Find $m\angle UST$.

10. Write down the center and radius of each circle.

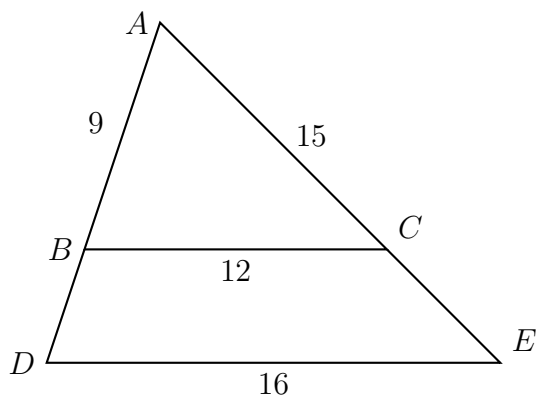   (a) $(x-1)^2 + (y+3)^2 = 81$ (b) $x^2 + y^2 = 49$

11. In the diagram below, $\overline{AC}$ has endpoints with coordinates $A(-4, 5)$ and $C(5, 2)$.
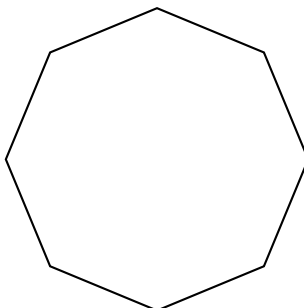

If B is a point on $\overline{AC}$ and AB:$BC = 1$:2, what are the coordinates of B?

12. Triangle ABC is dilated with a scale factor of k centered at A, yielding $\triangle ADE$, as shown. Given $AB = 9$, $BC = 12$, $AC = 15$, and $DE = 16$.

Find BD, AE, and k (the scale factor).

13. What is the smallest non-zero angle of rotation about its center that would map the octagon onto itself?

14. What transformation maps $\triangle ABC$ onto $\triangle DEF$, shown below? Fully specify the transformation.