

Good morning!

1. "Here"

2. Review for Unit 4 Test tomorrow!



Name: _____ Per: _____ Date: _____

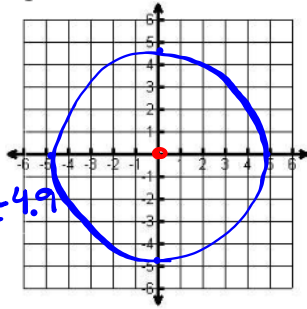
Coordinate Plane Review

Graph the following circles. State the center and radius.

1. $x^2 + y^2 = 24$

Center: $(0,0)$

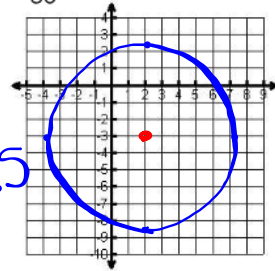
Radius: $\sqrt{24} \approx 4.9$
 $2\sqrt{6}$



2. $(x-2)^2 + (y+3)^2 = 30$

Center: $(2,-3)$

Radius: $\sqrt{30} = 5.5$



Write the standard equation for the circle.

3. $x^2 + y^2 - 10x - 2y = -10$

$x^2 - 10x + 25 + y^2 - 2y + 1 = -10 + 25 + 1$
 $(x-5)^2 + (y-1)^2 = 16$

Center: $(5,1)$ and $r = 4$

Write the general form for circle.

4. $(x-2)^2 + (y+1)^2 = 9$

$x^2 - 4x + 4 + y^2 + 2y + 1 = 9$
 $x^2 - 4x + y^2 + 2y - 4 = 0$

$x^2 + y^2 - 4x + 2y - 4 = 0$

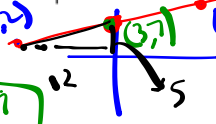
5. A circular disk drive has a diameter with endpoints at $(-9, 2)$ and $(15, 12)$. Find the center and radius of the disk drive. Write the equation of the circle in standard form.

(midpoint)
(distance)

Center: $(3,7)$

$r = \frac{\sqrt{12^2 + 5^2}}{2} = \frac{\sqrt{169}}{2} = \frac{13}{2}$

Equation: $(x-3)^2 + (y-7)^2 = 169$



- 1 Draw
- 2 H: highlight
- 3 Choose formula
- 4 Solve

6. State the center and radius:

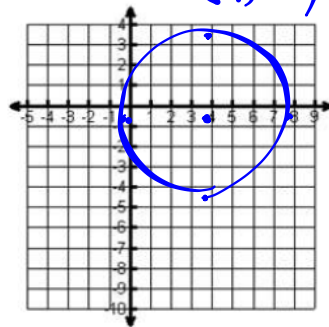
$(x-3)^2 + (y+5)^2 = 36$

C $(3,-5)$

$r = \sqrt{36} = 6$

7. Graph: $(x-4)^2 + (y+1)^2 = 16$

C $(4,-1)$ $r = 4$



$(y+1)^2$

① Square the 1st
② Square the last
③ Double the product
in the middle

$(y+1)(y+1)$

$y^2 + y + y + 1$
 $y^2 + 2y + 1$

	y	$+1$
y	y^2	$1y$
$+1$	$1y$	1

$y^2 + 2y + 1$

$$5 \sqrt{25} = \boxed{5}$$

Diagram showing the prime factorization of 25 as 5×5 , with an arrow pointing from the circled 5s to the number 5 on the left.

$$2 \sqrt[2]{24} = 2 \sqrt[2.3]{6}$$

Diagram showing the prime factorization of 24 as $2 \times 2 \times 2 \times 3$, with an arrow pointing from the circled 2s to the number 2 on the left.

4.9

Exact
Rounded

8. Determine what type of quadrilateral is shown:

① **Parallelogram**: Diagonals bisect each other (midpoint) mid DB $(\frac{-6+5}{2}, \frac{-1+2}{2}) = (-\frac{1}{2}, \frac{1}{2})$

mid AC $(\frac{1}{2}, \frac{1}{2})$

mid AB $(\frac{2+3}{2}, \frac{6+3}{2}) = (2.5, 4.5)$

mid CD $(\frac{-6+2}{2}, \frac{-1+2}{2}) = (-2, \frac{1}{2})$

② **Rectangle**

NOPE? $\overline{DA} \perp \overline{AB}$
 slope DA = $\frac{2}{8}$
 slope AB = $-\frac{3}{3} = -1$

NOPE a) Find the perimeter and area of the shape.
 $P = \text{add all sides}$
 $= \sqrt{13} + \sqrt{13} + \sqrt{18} + \sqrt{18}$
 $= 2\sqrt{13} + 2\sqrt{18}$
 $= 45.10 \text{ sq. units}$

$A = \sqrt{13} \cdot \sqrt{18}$
 $= 49.74 \text{ sq. units}$

$\sqrt{7^2+8^2} = \sqrt{113}$
 $\sqrt{3^2+3^2} = \sqrt{18}$

9. Find the midpoint of the points.

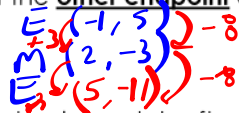
a. (-5, 3) (2, 6)

$(\frac{-5+2}{2}, \frac{3+6}{2}) = (-1.5, 4.5)$

b. (3, -2) (-1, 5)

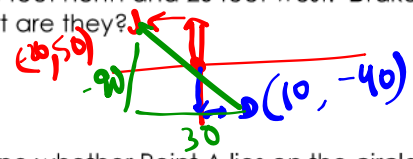
$(\frac{3+(-1)}{2}, \frac{-2+5}{2}) = (1, 1.5)$

10. Find the coordinates of the other endpoint of a segment with an endpoint of (-1, 5) and a midpoint (2, -3).



$(5, -11)$

11. Josh and Drake decide to play catch after school. They start at the same point. Josh walks 50 feet north and 20 feet west. Drake walks 40 feet south and 10 feet east. How far apart are they?



$D = \sqrt{(-40)^2 + 30^2}$
 $= \sqrt{1600 + 900} = \sqrt{2500} = 50$

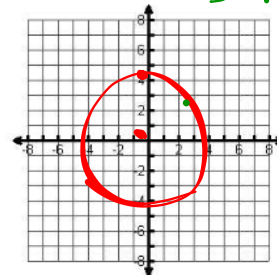
94.87 ft

12. Determine whether Point A lies on the circle whose center is Point C and which contains the Point P(0, 4). Justify your answer algebraically showing work.

Point A(3, $\sqrt{7}$); Point C(0, 0); Point P(0, 4)

$(x-0)^2 + (y-0)^2 = 16$
 $3^2 + (\sqrt{7})^2 = 16$
 $9 + 7 = 16 = 16$ **yes! on circle!**

$r = 4$
 $C = (0, 0)$



13. Find the equation of the line that is parallel to $y = 2x + 8$ that passes through (-6, 1).

↳ SAME slope $x y$

14. Find the equation of the line that is perpendicular to $y = 3x + 1$ that passes through (9, 5).

↳ ① Flip ② Change

15. Find the coordinates of point T so that it partitions AB into a ratio of 1:3. A (-8, -1) and B(12, 11)

$(\text{Starting point}) + (\text{Portion})(\text{total distance})$

Parallelogram

- ① Both pairs opp sides are Parallel ^(same slope)
- ② " " " Congruent ^(Distance)
- ③ One pair " " Parallel and congruent
- ④ Diagonals bisect each other ^(midpoint)
- ⑤ blah
- ⑥ blah

Rectangle

- ① 1st Parallelogram, THEN find one perpendicular (90°) angle *↓ slopes*
- ② Find all 4 90° angles
- ③ Diagonals are congruent *(Distance)*