

May 13, 2019, Monday

On-level Geometry Final Exam Study Guide

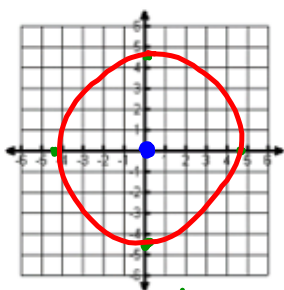
Name _____ S _____

Graph the following circles. State the center and radius.

1) $x^2 + y^2 = 20$

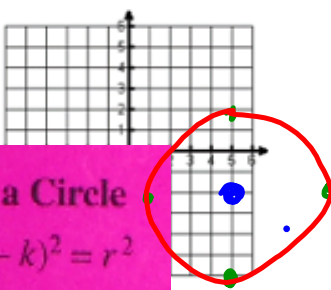
$\sqrt{r^2} = \sqrt{20}$
 $r = 4.5$

Center: (0,0) & Radius: 4.5

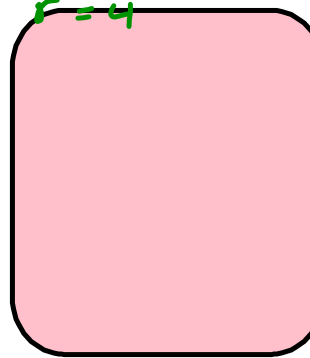


2) $(x-5)^2 + (y+2)^2 = 16$

Center: (5,-2) & Radius: 4



$\sqrt{r^2} = \sqrt{16}$
 $r = 4$



Equation of a Circle

$(x-h)^2 + (y-k)^2 = r^2$

Write the standard equation for the circle. State the center and radius.

3) $x^2 + y^2 - 14x + 4y - 11 = 0$

$x^2 - 14x + y^2 + 4y = 11$
 $(x-7)^2 + (y+2)^2 = 11 + 4$
 $(x-7)^2 + (y+2)^2 = 15$

4) $x^2 + y^2 - 8x + 4y - 6 = 0$

$x^2 - 8x + y^2 + 4y = 6$
 $(x-4)^2 + (y+2)^2 = 6 + 14$
 $(x-4)^2 + (y+2)^2 = 20$

- 1) group the x's, y's & move the constant ✓
- 2) complete the square for the x's & y's ✓
- 3) keep the equation balanced.

<https://www.mathplayground.com/division01.html>



1st Grade 2nd Grade 3rd Grade 4th Grade 5th Grade 6th Grade

Computation Practice

Division Facts

$$\begin{array}{r} \\ 9 \overline{) 36} \\ \underline{36} \\ 0 \end{array}$$

Correct Answer:

Start

IXL Learning, Inc [US] <https://www.multiplication.com/quiz/division-self-correcting-quizzes>

Enter answer with keyboard or touch pad

Division Equation Family Quizzes

(All equation for the fact group)

Pre-Test	Ones	Twos	Threes	Fours	Fives
Pre-Test	1	2	3	4	5
Sixes	Sevens	Eights	Nines	Post-Test	
6	7	8	9	Post-Test	

Division Up Through Quizzes

(All equation UP THROUGH the fact group)

Pre-Test	Ones	Twos	Threes	Fours	Fives
Pre-Test	1	2	3	4	5
Sixes	Sevens	Eights	Nines	Post-Test	
6	7	8	9	Post-Test	

①

② If you were having trouble select the correct # to practice, if no trouble

③

~~May 14, 2019, Tuesday~~

May 15, 2019 Wednesday

- 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, then convert it to general form.

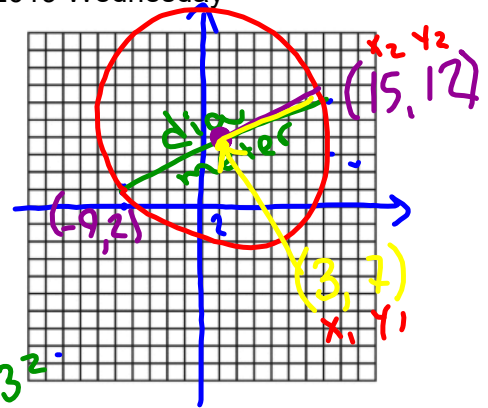
$$(x-h)^2 + (y-k)^2 = r^2$$

Midpoint $(\frac{-9+15}{2}, \frac{2+12}{2})$
 $(3, 7)$

$$d = \sqrt{(15-3)^2 + (12-7)^2}$$

$$d = 13$$

$$(x-3)^2 + (y-7)^2 = 13^2$$



$$(x-3)(x-3) + (y-7)(y-7) = 169$$

$$x^2 - 3x - 3x + 9 + y^2 - 7y - 7y + 49 = 169$$

$$x^2 + y^2 - 6x - 14y - 111 = 0$$

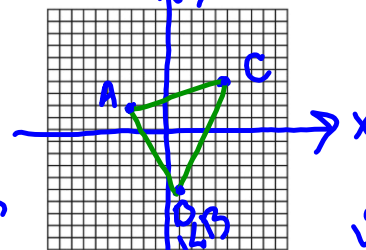
- 6) Find the point that partitions the line segment in a 1:1 ratio with endpoints $(8, 4)$ and $(-5, -7)$.

$$(x, y) = (x_1 + \frac{a}{a+b}(x_2 - x_1), y_1 + \frac{a}{a+b}(y_2 - y_1))$$

$$(8 + \frac{1}{1+1}(-5-8), 4 + \frac{1}{1+1}(-7-4))$$

$$(1.5, -1.5)$$

- 7) Find the perimeter of the triangle with the vertices $(-3, 2)$, $(1, -5)$, and $(5, 4)$.



$d_{AB} = 8.1$ $d_{BC} = 9.8$ $d_{AC} = 8.3$
 $d_{AB} + d_{BC} + d_{AC}$
 $8.1 + 9.8 + 8.3 = 26.2$

<http://www.thegreatmartinicompany.com/Math-Quick-Quiz/division-quiz.html>

Division Quiz

- | | |
|-------------------------------------|--------------------------------------|
| 1. $28 \div 4 = \square \square$ | 11. $77 \div 7 = \underline{\quad}$ |
| 2. $48 \div 12 = \underline{\quad}$ | 12. $108 \div 9 = \underline{\quad}$ |
| 3. $24 \div 6 = \underline{\quad}$ | 13. $56 \div 7 = \underline{\quad}$ |
| 4. $48 \div 6 = \underline{\quad}$ | 14. $32 \div 8 = \underline{\quad}$ |
| 5. $36 \div 9 = \underline{\quad}$ | 15. $20 \div 4 = \underline{\quad}$ |
| 6. $12 \div 6 = \underline{\quad}$ | 16. $14 \div 2 = \underline{\quad}$ |
| 7. $90 \div 9 = \underline{\quad}$ | 17. $66 \div 6 = \underline{\quad}$ |
| 8. $10 \div 5 = \underline{\quad}$ | 18. $1 \div 1 = \underline{\quad}$ |
| 9. $35 \div 5 = \underline{\quad}$ | 19. $18 \div 6 = \underline{\quad}$ |
| 10. $40 \div 8 = \underline{\quad}$ | 20. $27 \div 9 = \underline{\quad}$ |

Famous Mathematicians selections:

Pick 4 names of mathematics you would be interested in performing research on for the "Famous Mathematicians" project.

Write the numbers 1-4 on your hand out and return to me!

Famous Mathematicians

Brahmagupta	Madhava
Carl Friedrich Gauss	Pierre de Fermat
Charles Babbage	Pythagoras
Diophantus	Rene Descartes
Emmy Noether	Sophie Germain
Euclid	Thales
Fibonacci	Benjamin Banneker
George Boole	Charles Lewis Reason
Gottfried Leibniz	Kelly Miller
Grace Murray Hopper	Dudley Weldon Woodard
Isaac Newton	Martha Euphemia Lofton Haynes
John von Neumann	Elbert Frank Cox
John Wallis	William Waldron Schieffelin
Julia Robinson	Claytor
Leonhard Euler	Marjorie Lee Browne
Luca Pacioli	David Harold Blackwell

1) Select your top four name you are interested in learning more about.

2) I will (hopefully) choose one of your four to assign to you, so we can learn as about as many mathematicians as possible.

May 15, 2019, Wednesday

Change the following equations to general form of a circle, making sure it's in the correct order.

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

9) $(x - 3)^2 + (y + 8)^2 = 25$

10) Find the equation of a line that is parallel to $y = -\frac{3}{2}x + 3$ and passes through $(-4, 5)$.

11) Find the equation of a line that is perpendicular to $y = \frac{1}{3}x - 7$ and passes through $(12, -6)$.

12) Circle C has a center of $(3, 4)$ and a radius of 5. Does the point $(0, 10)$ lie on circle C? Show your evidence (work).

Assign Famous Mathematicians

3) You will research the name you have been assigned to learn at least the following:

Date of birth

Date of death

Birthplace

Location lived as an adult

Where they died

Picture

Family structure (parents, husband/wife, children, etc.)

What was this person's biggest contribution to the field of mathematics?

What are three interesting facts about this person (not included in the above information).

4) You may present your information in the form of:

PowerPoint Slides, these will have to be printed for display

Word Documents, these will have to be printed for display

Legibly handwritten on large paper or multiple sheets

****Your work will be displayed for other to read about your mathematician, so make sure your work is neat.**

5) When you have completed you research, see me, so we can find a place on the wall to display your work! Include your name visibly on each page displayed!

May 16, 2019, Thursday

$$ax^2 + by^2 + cx + dy + e = 0$$

Change the following equations to general form of a circle, making sure it's in the correct order.

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

$$(x-4)(x-4) + (y-1)(y-1) = 9$$

$$x^2 - 4x - 4x + 16 + y^2 - 1y - 1y + 1 = 9$$

$$x^2 - 8x + 16 + y^2 - 2y + 1 = 9$$

$$x^2 + y^2 - 8x - 2y + 17 = 9$$

$$x^2 + y^2 - 8x - 2y + 8 = 0$$

9) $(x-3)^2 + (y+8)^2 = 25$

$$(x-3)(x-3) + (y+8)(y+8) = 25$$

$$x^2 - 3x - 3x + 9 + y^2 + 8y + 8y + 64 = 25$$

$$x^2 - 6x + 9 + y^2 + 16y + 64 = 25$$

$$x^2 + y^2 - 6x + 16y + 48 = 0$$

10) Find the equation of a line that is parallel to $y = -\frac{3}{2}x + 3$ and passes through $(-4, 5)$.

$$y = mx + b$$

$$5 = -\frac{3}{2}(-4) + b$$

$$5 = 6 + b$$

$$-1 = b$$

$$y = -\frac{3}{2}x - 1$$

11) Find the equation of a line that is perpendicular to $y = \frac{1}{3}x - 7$ and passes through $(12, -6)$.

$$y = mx + b$$

$$-6 = -3(12) + b$$

$$-6 = -36 + b$$

$$30 = b$$

$$y = -3x + 30$$

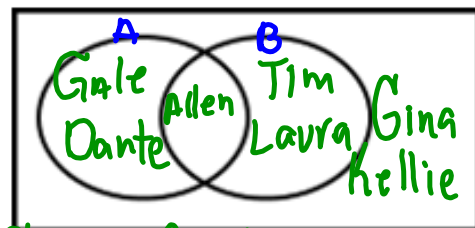
12) Circle C has a center of $(3, 4)$ and a radius of 5. Does the point $(0, 10)$ lie on circle C? Show your evidence (work).

No!

I will be signing exemption forms Monday! Know your grade and absences. You can view these in Infinite Campus!!

Probability Review: Venn Diagrams, Tables, & Words

- Event A: Gale, ~~Allen~~, & Dante like scary movies
- Event B: ~~Allen~~, Tim & Laura like comedy movies
- Gina & Kellie don't prefer either of those 2 types



NOT in section UNION

13) List the possible outcomes, or sample space for $A \cup B$.

G, D, A, T, L

14) List the outcomes for $A \cap B$.

Allen

15) List the outcomes for A' .

T, L, G, K NOT

16) Find $P(B)$

$$\frac{3}{7} =$$

17) Find $P(\overline{A \cup B})$

$$\frac{2}{7} =$$

18) Find $P(A \cap B)$

$$\frac{1}{7} =$$

Display Famous Mathematicians

May 17, 2019, Friday

The table below represents a table about upperclassmen's suggestions for a class activity.

- 19) Find $P(11th)$ $\frac{14}{40} =$
 20) Find $P(Dance)$ $\frac{12}{40} =$
 21) Find $P(10th \cup Dance)$ $\frac{14+12}{40}$
 22) Find $P(Field Trip \cap 11th)$ $\frac{3}{40}$
 23) Find $P(12th \cap Talent Show)$ $\frac{40-2}{40} = \frac{38}{40} = \frac{19}{20}$
 24) Find $P(10th | Field Trip)$ $\frac{8}{12} = \frac{2}{3}$
 25) Find $P(Talent Show | 10th)$ $\frac{4}{14}$

	Talent Show	Field Trip	Dance	Total
10 th	4	8	2	14
11 th	5	3	6	14
12 th	2	1	9	12
Total	11	12	17	40

Mutually Exclusive vs Overlapping

- 26) Which of the following are **mutually exclusive**?
- A. Choosing a King or a Diamond in a deck of cards
 - B. Choosing a band student or math student in a classroom
 - C. Rolling 2 dice and getting an even sum or a sum less than 7
 - D. Choosing a Jack or a 5 in a deck of cards

? $0.08 \times 0.4 \neq 0.12$

Check for Independent Events

- 27) Which of the following pair of events are **independent**?
- A. $P(A) = 0.08; P(B) = 0.4; P(A \cap B) = 0.12$
 - B. $P(A) = 0.30; P(B) = 0.15; P(A \cap B) = 0.045$
 - C. $P(A) = 0.16; P(B) = 0.24; P(A \cap B) = 0.32$

28) Use the data in the table to decide if liking PE is independent of your gender. Tip: You can check either male or female

$P(A) * P(B) = P(A \cap B)$

NO!

	Do you like PE?		
	Yes	No	
Male	38	12	= 50
Female	31	19	= 50
	69	31	100

The sum of 2 dice

- 29) $P(\text{even sum or a sum} > 9)$ $\frac{18+2}{36} = \frac{20}{36}$ 30) $P(\text{sum} < 7 \text{ or a sum} > 10)$ $\frac{15+3}{36} = \frac{18}{36}$ 31) $P(\text{odd sum or a sum} < 8)$ $\frac{18+9}{36} = \frac{27}{36}$

Calendar - A month is chosen from a year

- 32) Find the probability of choosing a month that begins with a vowel. $\frac{3}{12}$
 33) Find the probability of choosing a month starting with the letter M or J. $\frac{5}{12}$
 34) Find the probability of selecting a month that begins and ends with a consonant. $\frac{4}{12}$
 35) Find the probability of selecting a month that begins with a consonant and then selecting another month begins with a consonant (without replacement). $\frac{9}{12} * \frac{8}{11} = \frac{72}{132} = \frac{6}{11}$
 36) Find the probability of choosing a month that starts with a vowel given that it ends in the letter R. $\frac{1}{12}$

JANUARY	JULY
FEBRUARY	AUGUST
MARCH	SEPTEMBER
APRIL	OCTOBER
MAY	NOVEMBER
JUNE	DECEMBER

2	3	4	5	6	7
3	4	5	6	7	8
4	5	6	7	8	9
5	6	7	8	9	10
6	7	8	9	10	11
7	8	9	10	11	12

Amusement Park Project

