

تم تحميل هذا الملف من موقع المناهج الإماراتية



مراجعة وفق الهيكل الوزاري منهج ريفيل

موقع المناهج ← المناهج الإماراتية ← الصف العاشر المتقدم ← رياضيات ← الفصل الثاني ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 08:38:34 2025-03-06

ملفات اكتب للمعلم اكتب للطالب الاختبارات الكترونية الاختبارات ا حلول اعروض بوربوينت أوراق عمل منهج انجليزي ملخصات وتقارير مذكرات وبنوك الامتحان النهائي للمدرس

المزيد من مادة رياضيات:

إعداد: Alkaabi .M Maitha

التواصل الاجتماعي بحسب الصف العاشر المتقدم



الرياضيات



اللغة الانجليزية



اللغة العربية



التربية الاسلامية



المواد على تلغرام

صفحة المناهج الإماراتية على فيسبوك

المزيد من الملفات بحسب الصف العاشر المتقدم والمادة رياضيات في الفصل الثاني

حل أسئلة من امتحانات وزارية سابقة

1

تجميع أسئلة مراجعة وفق الهيكل الوزاري حسب منهج ريفيل

2

تجميع مراجعة صفحات الكتاب وفق الهيكل الوزاري منهج بريدج

3

حل أوراق عمل الوحدة السابعة الاحتمالات والقياس

4

أوراق عمل الوحدة السابعة الاحتمالات والقياس

5

G10 ADV – Term 2 EoT

Coverage

1st: MCQ

| | |
|----------------|--------------------|
| Subject | Mathematics |
| Grade | 10 ADV (inspire) |
| Name | |

44. **WHEELS** Zack is designing wheels for a concept car. The diameter of the wheel is 18 inches. Zack wants to make spokes in the wheel that run from the center of the wheel to the rim. In other words, each spoke is a radius of the wheel. How long are these spokes?

45. **PRECISION** Kathy slices through a circular cake. The cake has a diameter of 14 inches. The slice that Kathy made is straight and has a length of 11 inches. Did Kathy cut along a *radius*, a *diameter*, or a *chord* of the circle?

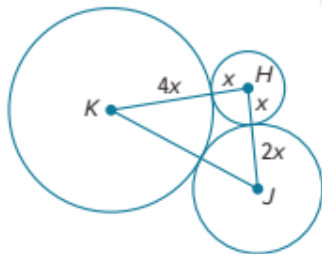
46. **REASONING** Three identical circular coins are lined up in a row as shown. The distance between the centers of the first and third coins is 3.2 centimeters. What is the radius of one of these coins?



47. **EXERCISE HOOPS** Taiga wants to make a circular hoop that he can twirl around his body for exercise. He will use a tube that is 2.5 meters long.
- What will be the diameter of Taiga's exercise hoop? Round your answer to the nearest thousandth of a meter.
 - What will be the radius of Taiga's exercise hoop? Round your answer to the nearest thousandth of a meter.

48. **WRITE** How can we describe the relationships that exist between circles and line segments?

49. **PERSEVERE** The sum of the circumferences of circles H , J , and K shown at the right is 56π units. Find KJ .



50. **ANALYZE** Is the distance from the center of a circle to a point in the interior of a circle *sometimes, always, or never* less than the radius of the circle? Justify your argument.

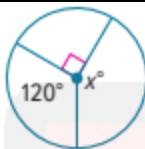
| | | | |
|---|---------------------------|-------|-----|
| 2 | Measuring Angles and Arcs | 1-9 | 237 |
| | | 12-19 | 237 |

Find the value of x .

1.



2.



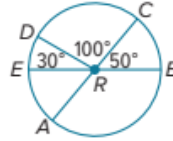
3.



| | | | |
|---|---------------------------|-------|-----|
| 2 | Measuring Angles and Arcs | 1-9 | 237 |
| | | 12-19 | 237 |

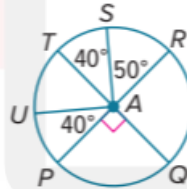
Example 2

\overline{AC} and \overline{EB} are diameters of $\odot R$. Identify each arc as a *major arc*, *minor arc*, or *semicircle*. Then find its measure.



| | |
|--------------------|---------------------|
| 4. $m\widehat{EA}$ | 5. $m\widehat{CB}$ |
| 6. $m\widehat{DC}$ | 7. $m\widehat{DEB}$ |
| 8. $m\widehat{AB}$ | 9. $m\widehat{CDA}$ |

\overline{PR} and \overline{QT} are diameters of $\odot A$. Find each measure.



| | |
|----------------------|----------------------|
| 12. $m\widehat{UPQ}$ | 13. $m\widehat{PQR}$ |
|----------------------|----------------------|

14. $m\overline{UTS}$

15. $m\overline{RS}$

16. $m\overline{RSU}$

17. $m\overline{STP}$

18. $m\overline{PQS}$

19. $m\overline{PRU}$

2025

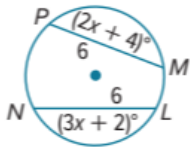
2024

| | | | |
|---|-----------------|-------|-----|
| 3 | Arcs and Chords | 1-9 | 245 |
| | | 17-18 | 246 |

REGULARITY Find the value of x .

| | |
|-----------|-----------|
| <p>1.</p> | <p>2.</p> |
| <p>3.</p> | <p>4.</p> |
| <p>5.</p> | <p>6.</p> |

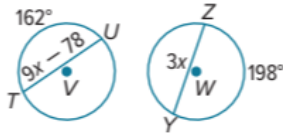
7.



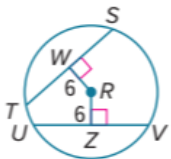
8. $\odot M \cong \odot P$



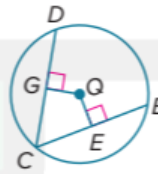
9. $\odot V \cong \odot W$



17. In $\odot R$, $TS = 21$ and $UV = 3x$. What is the value of x ?



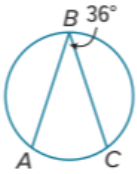
18. In $\odot Q$, $CD \cong CB$, $GQ = x + 5$, and $EQ = 3x - 6$. What is the value of x ?



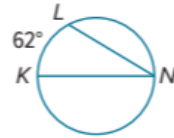
| | | | |
|---|------------------|------|-----|
| 4 | Inscribed Angles | 1-10 | 251 |
|---|------------------|------|-----|

Find each measure.

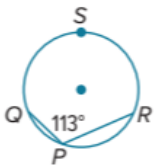
1. $m\widehat{AC}$



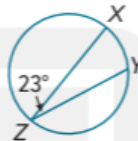
2. $m\angle N$



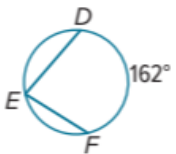
3. $m\widehat{QSR}$



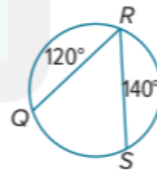
4. $m\widehat{XY}$



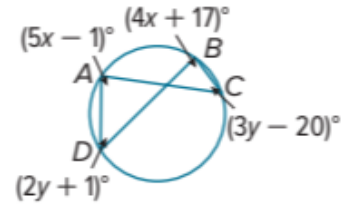
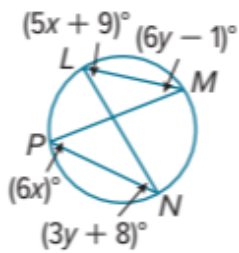
5. $m\angle E$



6. $m\angle R$



Find each measure.



7. $m\angle N$

9. $m\angle C$

8. $m\angle L$

10. $m\angle A$

16. **BASKETBALL** In a city basketball league there must be a minimum of 14 players on a team's roster. One 14-player team has three centers, four power forwards, two small forwards, three shooting guards, and the rest of the players are point guards. How many different 5-player teams are possible if one player is selected from each position?

17. VACATION RENTAL Angelica is comparing vacation prices in Boulder, Colorado, and Sarasota, Florida. In Boulder, she can choose a 1- or 2-week stay in a 1- or 2-bedroom suite. In Sarasota, she can choose a 1-, 2-, or 3-week stay in a 2- or 3-bedroom suite, on the beach or not.

- How many outcomes are available in Boulder?
- How many outcomes are available in Sarasota?
- How many total outcomes are available?

18. TRAVEL Maurice packs suits, shirts, and ties that can be mixed and matched. Use his packing list to draw a tree diagram to represent the sample space for possible suit combinations using one article from each category.

Maurice's Packing List

- Suits: Gray, black, khaki
- Shirts: White, light blue
- Ties: Striped (But optional)

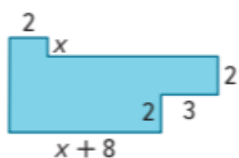
Find the number of possible outcomes for each situation.

19. SCHOOL Tala wears a school uniform that consists of a skirt or pants, a white shirt, a blue jacket or sweater, white socks, and black shoes. She has 3 pairs of pants, 3 skirts, 6 white shirts, 2 jackets, 2 sweaters, 6 pairs of white socks, and 3 pairs of black shoes.

20. **FOOD** A sandwich shop provides its customers with a number of choices for bread, meats, and cheeses. Provided one item from each category is selected, how many different sandwiches can be made?

| Bread | Meats | Cheeses |
|-------------|------------|------------|
| White | Turkey | American |
| Wheat | Ham | Swiss |
| Whole Grain | Roast Beef | Provolone |
| | Chicken | Colby-Jack |
| | | Muenster |

21. List six different expressions that could be used to evaluate the area of the composite figure.



22. **LICENSE PLATES** One state requires license plates to consist of three letters followed by three numbers. The letter "O" and the number "0" may not be used, but any other combination of letters or numbers is allowed. How many different license plates can be created?

23. **COLLEGE** Jack has been offered a number of internships that could occur in 3 different months, in 4 different departments, and for 3 different companies. Jack is only available to complete his internship in July. How many different outcomes are there for his internship?

| | | | |
|---|--------------------------|-------|-----|
| 6 | Probability and Counting | 15-20 | 379 |
| | | 21 | 380 |

15. **STATISTICS** A survey found that about 90% of the junior class is right-handed. If 1 junior is chosen at random out of 100 juniors, what is the probability that he or she is left-handed?

16. **RAFFLE** Raul bought 24 raffle tickets out of 1545 tickets sold. What is the probability that Raul will not win the grand prize of the raffle?

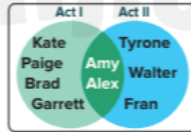
17. **MASCOT** At Riverview High School, 120 students were asked whether they prefer a lion or a timber wolf as the new school mascot. What is the probability that a randomly-selected student will have voted for a lion as the new school mascot?

| | Votes |
|-------------|-------|
| Lion | 78 |
| Timber Wolf | 42 |
| Total | 120 |

| | | | |
|---|--------------------------|-------|-----|
| 6 | Probability and Counting | 15-20 | 379 |
| | | 21 | 380 |

18. **COLLEGE** In Evan's senior class of 240 students, 85% are planning to attend college after graduation. What is the probability that a senior chosen at random is not planning to attend college after graduation?

19. **DRAMA CLUB** The Venn diagram shows the cast members who are in Acts I and II of a school play. One of the students will be chosen at random to attend a statewide performing arts conference. Let A be the event that a cast member is in Act I of the play and let B be the event that a cast member is in Act II of the play.



- Find $A \cap B$.
- What is the probability that the student who is chosen to attend the conference is a cast member in only one of the two Acts of the play.

20. **GAMES** LaRae is playing a game that uses a spinner. What is the probability that the spinner will land on a prime number on her next spin?



21. **SHOPPING** Raya asks 40 people outside the mall whether or not they visited for shopping or dining. She records the results in a Venn diagram. One person will be chosen at random to be interviewed on the local evening news. Find the probability that the person chosen will be someone who visited the mall for shopping and dining.



| | | | |
|---|---|-------|-----|
| 7 | Probability and the Multiplication Rule | 1-10 | 401 |
| | | 11-12 | 402 |

1. **CLOTHING** Omari has two pairs of red socks and two pairs of white socks in a drawer. He has a drawer with 2 red T-shirts and 1 white T-shirt. If he randomly chooses a pair of socks from the sock drawer and a T-shirt from the T-shirt drawer, what is the probability that he gets a pair of red socks and a white T-shirt?

2. Phyllis drops a penny in a pond, and then she drops a nickel in the pond. What is the probability that both coins land with tails showing?

3. A die is rolled and a penny is flipped. Find the probability of rolling a two and landing on a tail.

4. A bag contains 3 red marbles, 2 green marbles, and 4 blue marbles. A marble is drawn randomly from the bag and replaced before a second marble is chosen. Find the probability that both marbles are blue.

5. The forecast predicts a 40% chance of rain on Tuesday and a 60% chance on Wednesday. If these probabilities are independent, what is the chance that it will rain on both days?

Determine whether the events are *independent* or *dependent*. Explain your reasoning.

6. You roll an even number on a fair die, and then spin a spinner numbered 1 through 5 and it lands on an odd number.

7. An ace is drawn from a standard deck of 52 cards, and is not replaced. Then, a second ace is drawn.

8. In a bag of 3 green and 4 blue marbles, a blue marble is drawn and not replaced. Then, a second blue marble is drawn.

9. You roll two fair dice and roll a 5 on each.

10. **LOTTERY** Mr. Hanes places the names of four of his students, Joe, Sofia, Hayden, and Bonita, on slips of paper. From these, he intends to randomly select two students to represent his class at the robotics convention. He draws the name of the first student, sets it aside, then draws the name of the second student. What is the probability he draws Sofia, then Joe?

11. **CARDS** A card is drawn from a standard deck of playing cards and is not replaced. Then a second card is drawn. Find the probability the first card is a jack of spades and the second card is black.

12. **INTRAMURAL SPORTS** The table shows the color and number of jerseys available for the intramural volleyball tournament. If each jersey is given away randomly, what is the probability that the first and second jerseys given away are both red?

| Jersey Color | Amount |
|--------------|--------|
| blue | 20 |
| white | 15 |
| red | 25 |
| black | 10 |

8 Two-Way Frequency Tables

5-8

423

5. **SCHOOL** The two-way frequency table compares data about students in a class who completed or did not complete homework and those who passed or did not pass an exam. How many students completed their homework and passed the exam? Identify whether marginal or joint frequencies are used.

| | Completed Homework | Did Not Complete Homework | Totals |
|-------------------|--------------------|---------------------------|--------|
| Passed Exam | 18 | 2 | 20 |
| Did Not Pass Exam | 4 | 2 | 6 |
| Totals | 22 | 4 | 26 |

6. **MOVIES** Raquel surveys 160 people to determine if they prefer drama or comedy movies. The relative frequency table shows the data collected from the survey. Determine whether gender is independent of movie type preference. Explain your reasoning.

| | Drama | Comedy | Totals |
|--------|-------|--------|--------|
| Male | 12.5% | 25% | 37.5% |
| Female | 46.9% | 15.6% | 62.5% |
| Totals | 59.4% | 40.6% | 100% |

7. **TECHNOLOGY** For a business report on technology use, Darrell asks a random sample of 72 shoppers whether they own a smart phone and whether they own a tablet computer. His survey shows that out of 51 shoppers who own smart phones, 9 of them also own a tablet, while out of 21 shoppers who do not own smart phones, 15 of them do not own tablets either. Find the conditional probability that a shopper has a tablet, given that he or she has a smart phone. Justify your reasoning.

8. **CONSTRUCT ARGUMENTS** Paz asks a random sample of seniors at her high school whether they own a car and whether they have a job. The results of the survey are shown in the two-way relative frequency table. Paz says that the conditional probability that a student has a job given that he or she has a car is 46.7%. Do you agree? Justify your argument.

| | Has a Job | Does Not Have a Job | Totals |
|---------------------|-----------|---------------------|--------|
| Has a Car | 21.9% | 12.5% | 34.4% |
| Does Not Have a Car | 25% | 40.6% | 65.6% |
| Totals | 46.9% | 53.1% | 100% |

Determine the number of solutions for each system. Then state whether the system of equations is *consistent* or *inconsistent* and whether it is *independent* or *dependent*.

1. $y = 3x$
 $y = -3x + 2$

2. $y = x - 5$
 $-2x + 2y = -10$

3. $2x - 5y = 10$
 $3x + y = 15$

4. $3x + y = -2$
 $6x + 2y = 10$

5. $x + 2y = 5$
 $3x - 15 = -6y$

6. $3x - y = 2$
 $x + y = 6$

Solve the system of equations by graphing.

7. $x - 2y = 0$
 $y = 2x - 3$

8. $-4x + 6y = -2$
 $2x - 3y = 1$

9. $2x + y = 3$
 $y = \frac{1}{2}x - \frac{9}{2}$

10. $y - x = 3$
 $y = 1$

11. $2x - 3y = 0$
 $4x - 6y = 3$

12. $5x - y = 4$
 $-2x + 6y = 4$

| | | | |
|----|--|------|-----|
| 10 | Solving Systems of Equations Algebraically | 1-14 | 539 |
|----|--|------|-----|

Use substitution to solve each system of equations.

1. $2x - y = 9$
 $x + 3y = -6$

2. $2x - y = 7$
 $6x - 3y = 14$

3. $2x + y = 5$
 $3x - 3y = 3$

4. $3x + y = 7$
 $4x + 2y = 16$

5. $4x - y = 6$
 $2x - \frac{y}{2} = 4$

6. $2x + y = 8$
 $3x + \frac{3}{2}y = 12$

Solve each problem.

7. **BAKE SALE** Cassandra and Alberto are selling pies for a fundraiser. Cassandra sold 3 small pies and 14 large pies for a total of \$203. Alberto sold 11 small pies and 11 large pies for a total of \$220. Determine the cost of each pie.

- Write a system of equations and solve by using substitution.
- What does the solution represent in terms of this situation?
- How can you verify that the solution is correct?

8. **STOCKS** Ms. Patel invested a total of \$825 in two stocks. At the time of her investment, one share of Stock A was valued at \$12.41 and a share of Stock B was valued at \$8.62. She purchased a total of 79 shares.

- Write a system of equations and solve by substitution.
- How many shares of each stock did Ms. Patel buy? How much did she invest in each of the two stocks?

| | | | |
|----|--|------|-----|
| 10 | Solving Systems of Equations Algebraically | 1-14 | 539 |
|----|--|------|-----|

Use elimination to solve each system of equations.

| | |
|--|---|
| <p>9. $3x - 2y = 4$ $5x + 3y = -25$</p> | <p>10. $5x + 2y = 12$ $-6x - 2y = -14$</p> |
| <p>11. $7x + 2y = -1$ $21x + 6y = -9$</p> | <p>12. $3x - 5y = -9$ $-7x + 3y = 8$</p> |
| <p>13. $x - 3y = -12$ $2x + y = 11$</p> | <p>14. $6w - 8z = 16$ $3w - 4z = 8$</p> |

Solve each system of equations.

1. $2x + 3y - z = 0$

$$x - 2y - 4z = 14$$

$$3x + y - 8z = 17$$

2. $2p - q + 4r = 11$

$$p + 2q - 6r = -11$$

$$3p - 2q - 10r = 11$$

3. $a - 2b + c = 8$

$$2a + b - c = 0$$

$$3a - 6b + 3c = 24$$

4. $3s - t - u = 5$

$$3s + 2t - u = 11$$

$$6s - 3t + 2u = -12$$

5. $2x - 4y - z = 10$

$$4x - 8y - 2z = 16$$

$$3x + y + z = 12$$

6. $p - 6q + 4r = 2$

$$2p + 4q - 8r = 16$$

$$p - 2q = 5$$

Solve each system of equations.

7. $2a + c = -10$
 $b - c = 15$
 $a - 2b + c = -5$

8. $x + y + z = 3$
 $13x + 2z = 2$
 $-x - 5z = -5$

9. $2m + 5n + 2p = 6$
 $5m - 7n = -29$
 $p = 1$

10. $f + 4g - h = 1$
 $3f - g + 8h = 0$
 $f + 4g - h = 10$

11. $-2c = -6$
 $2a + 3b - c = -2$
 $a + 2b + 3c = 9$

12. $3x - 2y + 2z = -2$
 $x + 6y - 2z = -2$
 $x + 2y = 0$

- 13. ANIMAL NUTRITION** A veterinarian wants to make a food mix for guinea pigs that contains 23 grams of protein, 6.2 grams of fat, and 16 grams of moisture. The composition of three available mixtures are shown in the table. How many grams of each mix should be used to make the desired new mix?

| | Protein (g) | Fat (g) | Moisture (g) |
|-------|-------------|---------|--------------|
| Mix A | 0.2 | 0.02 | 0.15 |
| Mix B | 0.1 | 0.06 | 0.10 |
| Mix C | 0.15 | 0.05 | 0.05 |

- 14. ENTERTAINMENT** At the arcade, Marcos, Sara, and Darius played video racing games, pinball, and air hockey. Marcos spent \$6 for 6 racing games, 2 pinball games, and 1 game of air hockey. Sara spent \$12 for 3 racing games, 4 pinball games, and 5 games of air hockey. Darius spent \$12.25 for 2 racing games, 7 pinball games, and 4 games of air hockey. How much did each of the games cost?

- 15. FOOD** A natural food store makes its own brand of trail mix from dried apples, raisins, and peanuts. A one-pound bag of the trail mix costs \$3.18. It contains twice as much peanuts by weight as apples. If a pound of dried apples costs \$4.48, a pound of raisins is \$2.40, and a pound of peanuts is \$3.44, how many ounces of each ingredient are contained in 1 pound of the trail mix?

| | | | |
|----|------------------------------|-------|----|
| 12 | Graphing Quadratic Functions | 13-24 | 10 |
|----|------------------------------|-------|----|

Determine the average rate of change of $f(x)$ over the specified interval.

| | |
|---|--|
| <p>13. $f(x) = x^2 - 10x + 5$; interval $[-4, 4]$</p> | <p>14. $f(x) = 2x^2 + 4x - 6$; interval $[-3, 3]$</p> |
| <p>15. $f(x) = 3x^2 - 3x + 1$; interval $[-5, 5]$</p> | <p>16. $f(x) = 4x^2 + x + 3$; interval $[-2, 2]$</p> |
| <p>17. $f(x) = 2x^2 - 11$; interval $[-3, 3]$</p> | <p>18. $f(x) = -2x^2 + 8x + 7$; interval $[-4, 4]$</p> |

Determine the average rate of change of $f(x)$ over the specified interval.

19. interval $[-3, 3]$

| x | $f(x)$ |
|-----|--------|
| -3 | 0 |
| -2 | 3 |
| -1 | -4 |
| 0 | -3 |
| 1 | 0 |
| 2 | 5 |
| 3 | 12 |

20. interval $[-4, 4]$

| x | $f(x)$ |
|-----|--------|
| -4 | -27 |
| -2 | -3 |
| 0 | 5 |
| 2 | -3 |
| 4 | -27 |

21. interval $[-2, 2]$

| x | $f(x)$ |
|-----|--------|
| -2 | -3 |
| -1 | -3 |
| 0 | -1 |
| 1 | 3 |
| 2 | 9 |

22. interval $[-5, 5]$

| x | $f(x)$ |
|-----|--------|
| -5 | -39 |
| -3 | -15 |
| -1 | 1 |
| 0 | 6 |
| 1 | 9 |
| 3 | 9 |
| 5 | 1 |

23. interval $[-3, 3]$

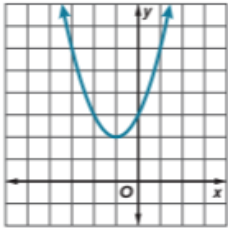
| x | $f(x)$ |
|-----|--------|
| -3 | 27 |
| -2 | 12 |
| -1 | 3 |
| 0 | 0 |
| 1 | 3 |
| 2 | 12 |
| 3 | 27 |

24. interval $[-2, 2]$

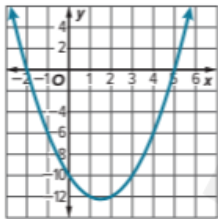
| x | $f(x)$ |
|-----|--------|
| -2 | 12 |
| -1 | 5 |
| 0 | 0 |
| 1 | -3 |
| 2 | -4 |

Use the related graph of each equation to determine its solutions.

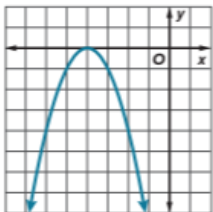
1. $x^2 + 2x + 3 = 0$



2. $x^2 - 3x - 10 = 0$



3. $-x^2 - 8x - 16 = 0$



Solve each equation by graphing.

4. $x^2 - 10x + 21 = 0$

5. $4x^2 + 4x + 1 = 0$

6. $x^2 + x - 6 = 0$

7. $x^2 + 2x - 3 = 0$

8. $-x^2 - 6x - 9 = 0$

9. $x^2 - 6x + 5 = 0$

10. $x^2 + 2x + 3 = 0$

11. $x^2 - 3x - 10 = 0$

12. $-x^2 - 8x - 16 = 0$

13. Use a quadratic equation to find two real numbers with a sum of 2 and a product of -24 .

14. Use a quadratic equation to find two real numbers with a sum of -15 and a product of -54 .

Solve each equation by graphing. If the exact roots cannot be found, state the consecutive integers between which the roots are located.

15. $x^2 - 4x + 2 = 0$

16. $x^2 + 6x + 6 = 0$

17. $x^2 + 4x + 2 = 0$

18. $-x^2 - 4x = 0$

19. $-x^2 + 36 = 0$

20. $x^2 - 6x + 4 = 0$

21. $x^2 + 5x + 3 = 0$

22. $x^2 - 7 = 0$

23. $-x^2 - 4x - 6 = 0$

Find the values of x and y that make each equation true.

19. $9 + 12i = 3x + 4yi$

20. $x + 1 + 2yi = 3 - 6i$

21. $2x + 7 + (3 - y)i = -4 + 6i$

22. $5 + y + (3x - 7)i = 9 - 3i$

23. $20 - 12i = 5x + (4y)i$

24. $x - 16i = 3 - (2y)i$

Simplify.

25. $(6 + i) + (4 - 5i)$

26. $(8 + 3i) - (6 - 2i)$

27. $(5 - i) - (3 - 2i)$

28. $(-4 + 2i) + (6 - 3i)$

29. $(6 - 3i) + (4 - 2i)$

30. $(-11 + 4i) - (1 - 5i)$

Simplify.

31. $(2 + i)(3 - i)$

32. $(5 - 2i)(4 - i)$

33. $(4 - 2i)(1 - 2i)$

34. **ELECTRICITY** Using the formula $V = CI$, find the voltage V in a circuit when the current $C = 3 - j$ amps and the impedance $I = 3 + 2j$ ohms.

35. $\frac{5}{3 + i}$

36. $\frac{7 - 13i}{2i}$

37. $\frac{6 - 5i}{3i}$

Solve each equation by factoring. Check your solution.

15. $x^2 = 64$

16. $x^2 - 100 = 0$

17. $289 = x^2$

18. $x^2 + 14 = 50$

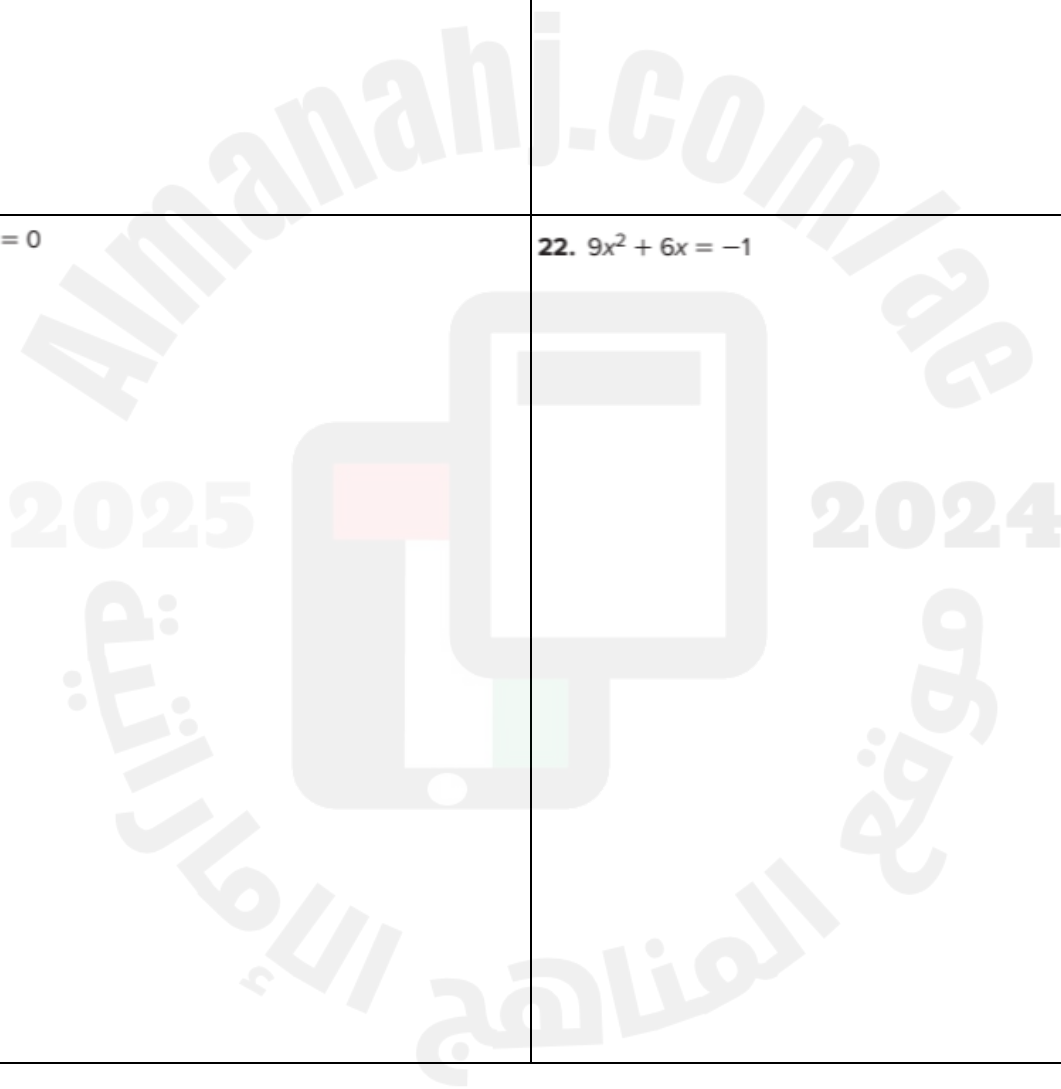
Solve each equation by factoring. Check your solution.

19. $x^2 - 169 = 0$

20. $124 = x^2 + 3$

21. $4x^2 - 28x + 49 = 0$

22. $9x^2 + 6x = -1$



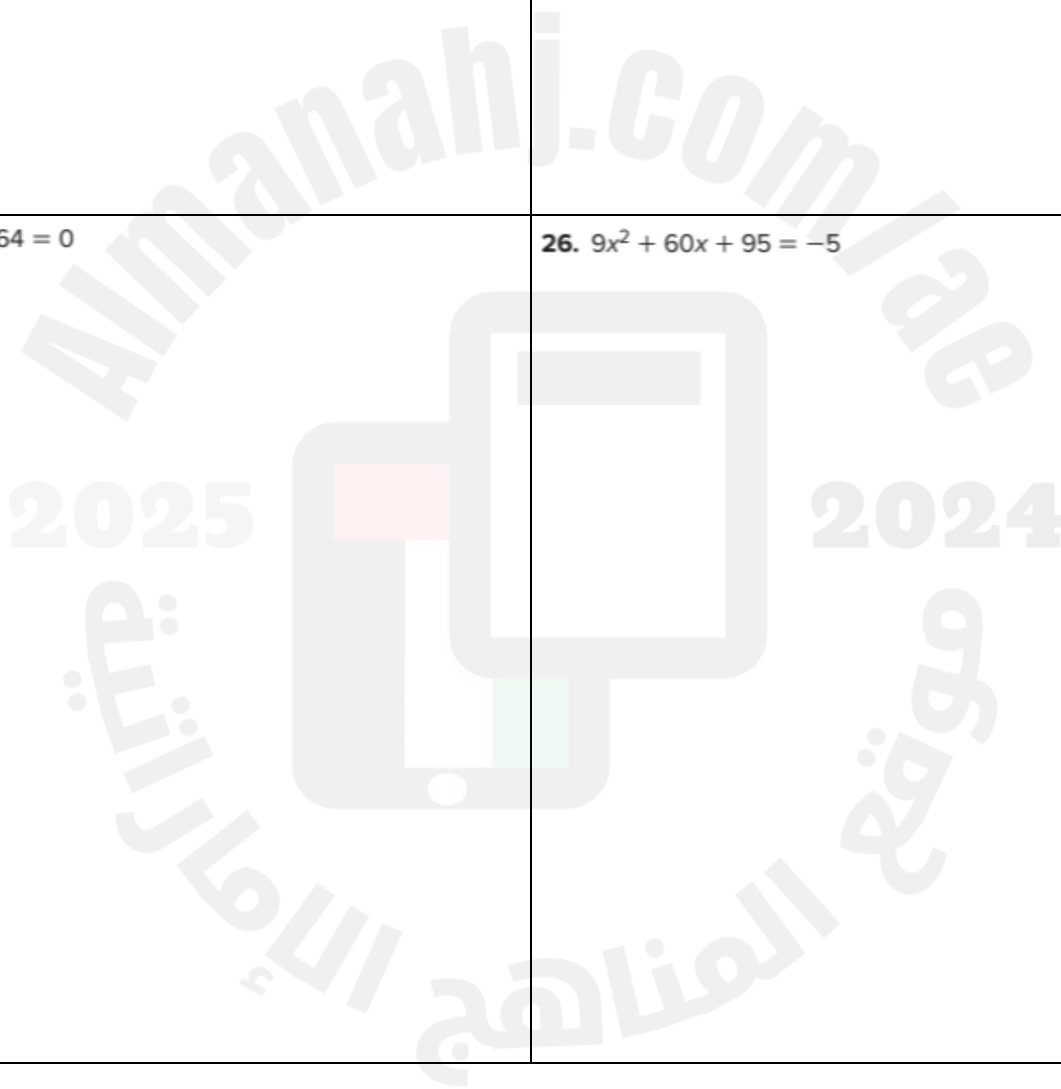
Solve each equation by factoring. Check your solution.

23. $16x^2 - 24x + 13 = 4$

24. $81x^2 + 36x = -4$

25. $25x^2 + 80x + 64 = 0$

26. $9x^2 + 60x + 95 = -5$



Solve each equation by factoring. Check your solution.

27. $x^2 + 12 = -13$

28. $x^2 + 100 = 0$

29. $x^2 = -225$

30. $x^2 + 4 = 0$



31. $36x^2 = -25$

32. $64x^2 = -49$



G10 ADV – Term 2 EoT

Coverage

2nd: FRQ

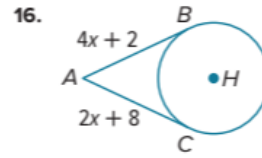
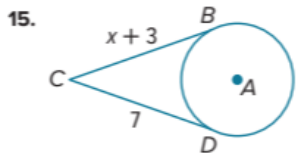
| | |
|----------------|--------------------|
| Subject | Mathematics |
| Grade | 10 ADV (inspire) |
| Name | |

| | | | |
|----|----------------------------|-------|-----|
| 16 | Use properties of tangents | 9-14 | 259 |
| | | 15-16 | 260 |

Find the value of x . Assume that segments that appear to be tangent are tangent. Round your answer to the nearest hundredth, if needed.

| | |
|------------|------------|
| <p>9.</p> | <p>10.</p> |
| <p>11.</p> | <p>12.</p> |
| <p>13.</p> | <p>14.</p> |

Find the value of x . Assume that segments that appear to be tangent are tangent.



| | | | |
|----|-----------------------------------|-------|-----|
| 17 | Probability and the Addition Rule | 19-14 | 411 |
| | Conditional Probability | 1-10 | 415 |

19. **SCHOLARSHIPS** A review committee read 3000 application essays for one \$5000 college scholarship. Of the applications reviewed, 2865 essays were the required length, 2577 of the applicants had the minimum required grade-point average, and 2486 had the required length and minimum grade-point average. What is the probability that an application essay selected at random will have the required length or the required grade-point average?

20. **PETS** Ruby's cat had 8 kittens. The litter included 2 orange females, 3 mixed-color females, 1 orange male, and 2 mixed-color males. Ruby wants to keep one kitten. What is the probability that she randomly chooses a kitten that is female or orange?

21. **SPORTS** The table shows the age and number of participants in each sport at a sporting complex. What is the probability that a player is 14 or plays basketball?

| Mason Sports Complex | | | |
|----------------------|--------|------------|------------|
| Age | Soccer | Volleyball | Basketball |
| 14 | 28 | 36 | 42 |
| 15 | 30 | 26 | 33 |
| 16 | 35 | 41 | 29 |

22. **USE A MODEL** Vicente and Kelly are designing a board game. They decide that the game will use a pair of dice and the players will have to find the sum of the numbers rolled. Vicente and Kelly created the table shown to help determine probabilities. Each player will roll the pair of dice twice during that player's turn.

- What is the probability of rolling a pair or two numbers that have a sum of seven?
- What is the probability of rolling two numbers whose sum is an even number or not rolling a 2? Round to the nearest thousandth.

| | | | | | |
|------|------|------|------|------|------|
| 1, 1 | 1, 2 | 1, 3 | 1, 4 | 1, 5 | 1, 6 |
| 2, 1 | 2, 2 | 2, 3 | 2, 4 | 2, 5 | 2, 6 |
| 3, 1 | 3, 2 | 3, 3 | 3, 4 | 3, 5 | 3, 6 |
| 4, 1 | 4, 2 | 4, 3 | 4, 4 | 4, 5 | 4, 6 |
| 5, 1 | 5, 2 | 5, 3 | 5, 4 | 5, 5 | 5, 6 |
| 6, 1 | 6, 2 | 6, 3 | 6, 4 | 6, 5 | 6, 6 |

| | | | |
|----|-----------------------------------|-------|-----|
| 17 | Probability and the Addition Rule | 19-14 | 411 |
| | Conditional Probability | 1-10 | 415 |

1. **CLUBS** The Spanish Club is having a potluck lunch where each student brings in a cultural dish. The 10 students randomly draw cards numbered with consecutive integers from 1 to 10. Students who draw odd numbers will bring main dishes. Students who draw even numbers will bring desserts. If Cynthia is bringing a dessert, what is the probability that she drew the number 10?

2. A card is randomly drawn from a standard deck of 52 cards. What is the probability that the card is a king of diamonds, given that the card drawn is a king?

3. **GAME** In a game, a spinner with the 7 colors of the rainbow is spun. Find the probability that the color spun is blue, given the color is one of the three primary colors: red, yellow, or blue.

4. Fifteen cards numbered 1–15 are placed in a hat. What is the probability that the card has a multiple of 3 on it, given that the card picked is an odd number?

| | | | |
|----|-----------------------------------|-------|-----|
| 17 | Probability and the Addition Rule | 19-14 | 411 |
| | Conditional Probability | 1-10 | 415 |

5. A blue marble is selected at random from a bag of 3 red and 9 blue marbles and not replaced. What is the probability that a second marble selected will be blue?

6. A die is rolled. If the number rolled is less than 5, what is the probability that it is the number 2?

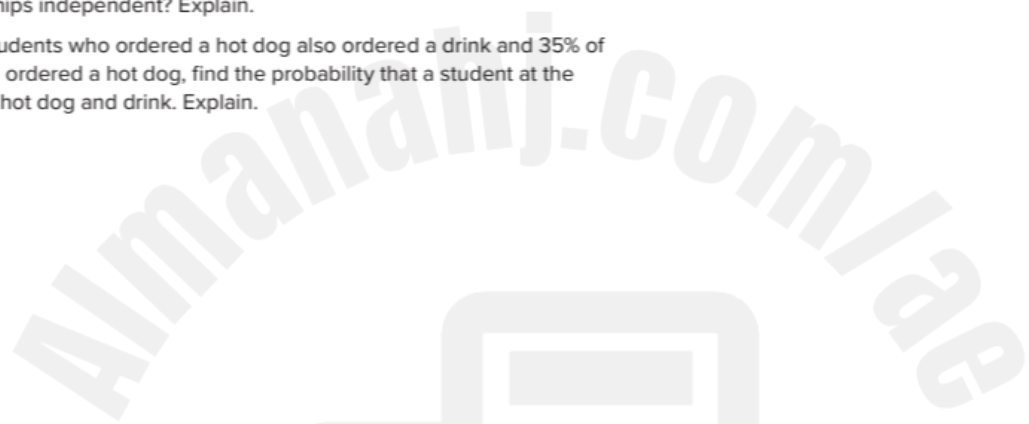
7. If two dice are rolled, what is the probability that the sum of the faces is 4, given that the first die rolled is odd?

8. A spinner numbered 1 through 12 is spun. Find the probability that the number spun is an 11 given that the number spun was an odd number.

9. If two dice are rolled, what is the probability that the sum of the faces is 8, given that the first die rolled is even?

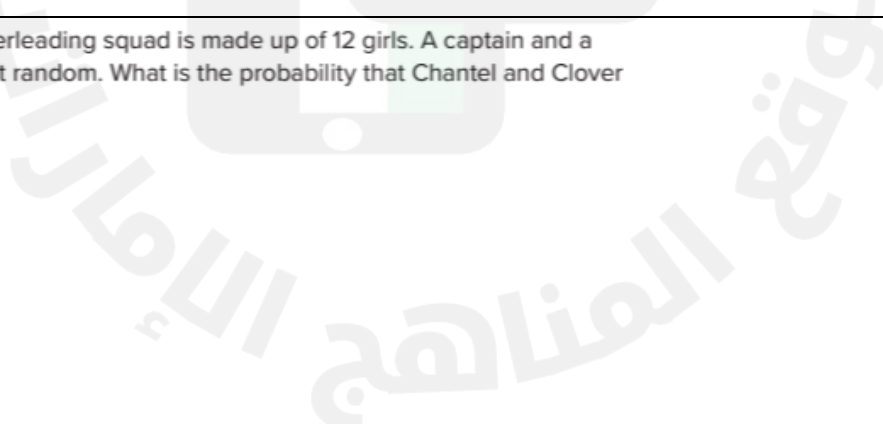
10. **PICNIC** A school picnic offers students hamburgers, hot dogs, chips, and a drink.

- a. At the picnic, 60% of the students order a hamburger and 48% of the students order a hamburger and chips. What is the conditional probability that a student who orders a hamburger also orders chips?
- b. If 50% of the students ordered chips, are the events of ordering a hamburger and ordering chips independent? Explain.
- c. If 80% of the students who ordered a hot dog also ordered a drink and 35% of all the students ordered a hot dog, find the probability that a student at the picnic orders a hot dog and drink. Explain.



| | | | |
|----|--|-----|-----|
| 18 | Probability with Permutations and Combinations | 1-7 | 393 |
|----|--|-----|-----|

1. **CHEERLEADING** The cheerleading squad is made up of 12 girls. A captain and a co-captain are selected at random. What is the probability that Chantel and Clover are chosen as leaders?



2. **BOOKS** You have a textbook for each of the following subjects: Spanish, English, Chemistry, Geometry, History, and Psychology. If you choose 4 of these books at random to arrange on a shelf, what is the probability that the Geometry textbook will be first from the left and the Chemistry textbook will be second from the left?

3. **RAFFLE** Alfonso and Cordell each bought one raffle ticket at the state fair. If 50 tickets were randomly sold, what is the probability that Alfonso got ticket 14 and Cordell got ticket 23?

4. **CONCERT** Nia and Ciro are going to a concert with their high school's key club. If they choose a seat in the row below at random, what is the probability that Ciro will be in seat C11 and Nia will be in C12?



5. **PHONE NUMBERS** What is the probability that a 7-digit telephone number generated using the digits 2, 3, 2, 5, 2, 7, and 3 is the number 222-3357?

6. **IDENTIFICATION** A store randomly assigns their employees work identification numbers to track productivity. Each number consists of 5 digits ranging from 1–9. If the digits cannot repeat, find the probability that a randomly generated number is 25938.

7. **STUDENT COUNCIL** The table shows the finalists for class president. The order in which they will give their speeches will be chosen randomly.

- a. What is the probability that Denny, Kelli, and Chaminade are the first 3 speakers, in any order?
- b. What is the probability that Denny is first, Kelli is second, and Chaminade is third?

| Class President Finalists |
|---------------------------|
| Alan Shepherd |
| Chaminade Hudson |
| Denny Murano |
| Kelli Baker |
| Tanika Johnson |
| Jerome Murdock |
| Marlene Lindeman |

Solve each equation by graphing.

1. $|x - 4| = 5$

2. $|2x - 3| = 17$

3. $3 + |2x + 1| = 3$

4. $|x - 1| + 6 = 4$

5. $7 + |3x - 1| = 7$

6. $|x + 2| + 5 = 13$

Find the value of the discriminant for each quadratic equation. Then describe the number and type of roots for the equation.

24. $x^2 - 8x + 16 = 0$

25. $x^2 - 11x - 26 = 0$

26. $3x^2 - 2x = 0$

27. $20x^2 + 7x - 3 = 0$

28. $5x^2 - 6 = 0$

29. $x^2 - 6 = 0$

Find the value of the discriminant for each quadratic equation. Then describe the number and type of roots for the equation.

30. $x^2 + 8x + 13 = 0$

31. $5x^2 - x - 1 = 0$

32. $x^2 - 2x - 17 = 0$

33. $x^2 + 49 = 0$

34. $x^2 - x + 1 = 0$

35. $2x^2 - 3x = -2$

