OAK HALL SCHOOL

2024-2025

Suggested Review Exercises
for students entering

Probability & Statistics

A message from the Math Department

Mathematics is a subject that is cumulative in nature as it constructs new knowledge from foundational prior knowledge. Therefore, as it is imperative to our students' success, we require them to have mastered certain skills and concepts before entering a new math course.

Each course in the math department has provided suggested exercises for incoming students as a resource for them to review the required prerequisites that are critical to their success in the course. While we will not be requiring students to complete these exercises as a formal assignment to be turned in, we have the highest expectations of our students as self-aware, proactive learners. Each student is responsible for gauging which prerequisites they need to reinforce and how much studying they need to do for them to start the new school year feeling confident, prepared, and accomplished.

We recommend that our students begin this process mid to late summer in order for everything to be fresh in their minds but also to give them time to recover from the school year they just completed. Rest is not an indulgence; it is a human necessity. We hope everyone has a safe, fun, and restful summer and we look forward to having another great school year when we come back in August!

Prob & Stat Name_____

© 2021 Kuta Software LLC. All rights reserved.

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

1) Life Expectancy

State	Years
West Virginia	74.1
Mississippi	74.2
South Dakota	74.3
Kentucky	74.7

State	Years
District of Columbia	77.9
South Carolina	78.3
Kansas	78.6
Arizona	79.3

State	Years
Wisconsin	79.8
Nebraska	79.8
Iowa	79.8

State	Years
North Dakota	80.2
Washington	80.3
Vermont	80.4

State	Years
Maryland	81
Ohio	81
Oregon	82

Find the probability of each event.

2) A basketball player has a 50% chance of making each free throw. What is the probability that the player makes exactly six out of eleven free throws?

Find the number of possibilities in each scenario.

3) There are 300 people at a meeting. They each shake hands with everyone else. How many handshakes were there?

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

4) Large US Cities

City	Population
Birmingham	212,237
Irvine	212,375
Garland	226,876
Orlando	238,300

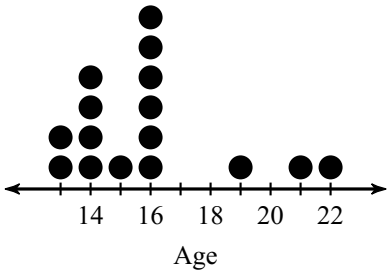
City	Population
Norfolk	242,803
Lincoln	258,379
Greensboro	269,666
Newark	277,140

City	Population
Stockton	291,707
Cincinnati	296,943
Pittsburgh	305,704
Colorado Springs	416,427

City	Population
Seattle	608,660
Baltimore	620,961
San Antonio	1,327,407

© 2021 Kuta Software LLC. All rights reserved.Made with Infinite Pre-Algebra.

5) Age at First Job



Solve each equation by factoring.

6) $b^2 - 40 = 3b$

Evaluate each expression.

7) $\dfrac{26 + 2 - 4}{6}$

8) ${}_{21}C_{16}$

Find the probability of each event.

9) One day, eleven babies are born at a hospital. Assuming each baby has an equal chance of being a boy or girl, what is the probability that at least ten of the eleven babies are girls?

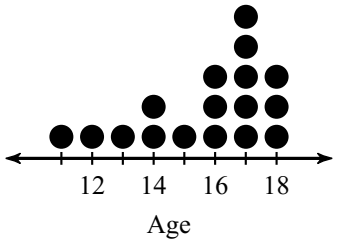
© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Find the number of possibilities in each scenario.

10) Carlos and Mofor are planning trips to three countries this year. There are 4 countries they would like to visit. One trip will be one week long, another two days, and the other two weeks.

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

11) Age at First Job



Find the number of possibilities in each scenario.

12) Ming has homework in four subjects. She is deciding what order to complete them in.

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Write the slope-intercept form of the equation of the line through the given point with the given slope.

13) through: $(3, 5)$, slope = 3

Simplify.

14) $\sqrt[3]{192m^4}$

Solve each equation by factoring.

15) $26n^2 - 178n + 110 = 2n^2 + 6n - 2$

Evaluate each using the values given.

16) $j + 2 - h - 3k$; use $h = 9$, $j = -7$, and $k = 8$

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Solve each equation.

17) $-9(n-8)+4(n-9)=-2n+6n$

18) $|6k-1|=1$

Solve each equation by factoring.

19) $(3a+1)(a+1)=0$

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

20) Age at First Job

11	13	13	13	13	13	14
15	15	16	16	17	17	18
18	18	22				

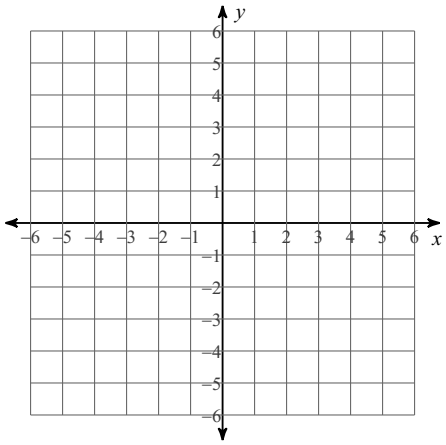
Simplify each expression.

21) $-3b(-5b-3)-6b(7b+2)$

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Sketch the graph of each line.

22) $y = \frac{5}{4}x$



Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

23) Monthly Revenue

Stem	Leaf
4	0 0 1 1 4 7
5	2 5 6 7 9
6	1 2 6 8
7	1

Key: 4|7 = 47,000

Solve each equation.

24) $-37 + 8m = -5(-7m + 2)$

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

25) Injuries Due to Distracted Driving per Month

Stem	Leaf
5	3 8 8
6	1 8
7	5
8	1 4 5 7
9	2 2 3 6 7
10	2

Key: 7|5 = 7,500

Find the probability of each event.

26) A class has nine boys and five girls. If the teacher randomly picks nine students, what is the probability that she will pick all boys?

Factor each completely.

27) $300 - 192x^2$

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

Find the probability of each event.

28) A six-sided die is rolled eleven times. What is the probability that the die will show an even number exactly three times?

Solve each equation.

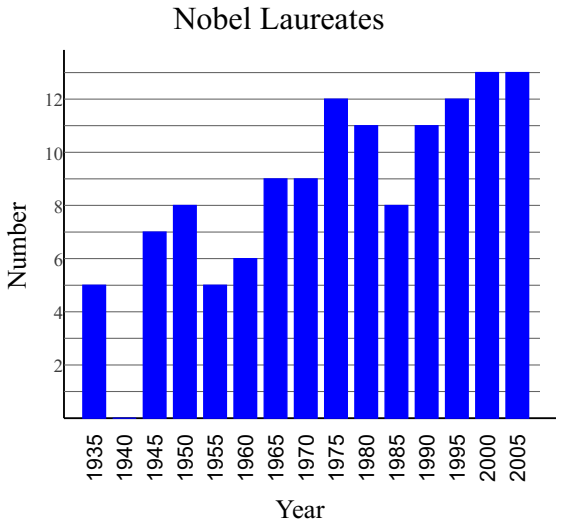
29) $-4(-2+3r)+11(-1+r)=1-10r+1+8r$

Evaluate each expression.

30) $9+(-8)-10-(-7)$

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

31)



Simplify each expression.

32) $6m(8m-1)+7m(-5m-5)$

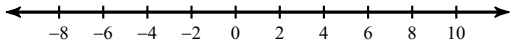
© 2021 Kuta Software LLC. All rights reserved.

List all possible combinations.

33) 4, 5, 6, 7, taken two at a time

Solve each inequality and graph its solution.

34) $|6k - 8| \leq 56$



Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

35) Age Assumed Office

Senator	Age
Marco Rubio	39
Chris Murphy	39
Patty Murray	42
David Vitter	43

Senator	Age
Chris Coons	47
Jon Tester	50
John Barrasso	54

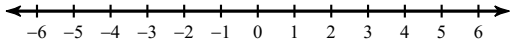
Senator	Age
Ron Johnson	55
Tom Coburn	56
Al Franken	58

Senator	Age
Dianne Feinstein	59
Pat Roberts	60
Johnny Isakson	60

Senator	Age
Richard Blumenthal	64
Mazie Hirono	65
Dan Coats	67

Solve each inequality and graph its solution.

36) $|3 + 3r| - 9 \leq 0$



© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Factor each completely.

37) $8x^3 - 20x^2 + 6x - 15$

Evaluate each expression.

38) ${}_{19}C_{13}$

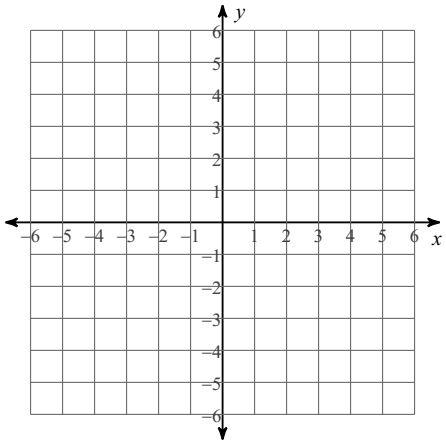
Factor each completely.

39) $2n^3 + 4n^2 + n + 2$

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Sketch the graph of each line.

40) $-4x - 2y = -10$



Find the number of possibilities in each scenario.

41) The student body of 100 students wants to elect three representatives.

Factor each completely.

42) $v^2 + 10v + 25$

Find the number of possibilities in each scenario.

43) The batting order for nine players on a 12 person team.

44) There are 280 people at a meeting. They each give a Valentine's Day card to everyone else. How many cards were given?

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

Evaluate each using the values given.

45) $y(x + 9 - z) - z$; use $x = 9$, $y = 3$, and $z = -8$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

46) through: $(4, 3)$, slope = 2

Solve each equation.

47) $-12 - 6x = -2(x - 6)$

Simplify.

48) $2\sqrt{28x^4}$

In each problem, angle C is a right angle. Solve each triangle rounding answers to the nearest tenth.

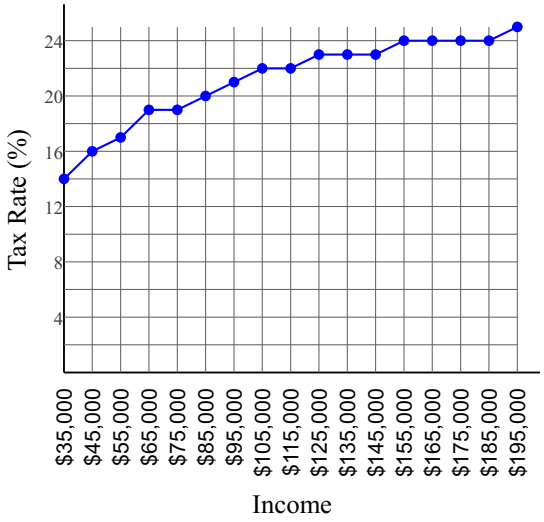
49) $m\angle B = 62°$, $b = 8$ in

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

50) Federal Income Tax



Solve each equation.

51) $5\left|5n - 6\right| = 30$

Simplify.

52) $6\sqrt{392x}$

Solve each equation by factoring.

53) $126k^2 = 24k + 192$

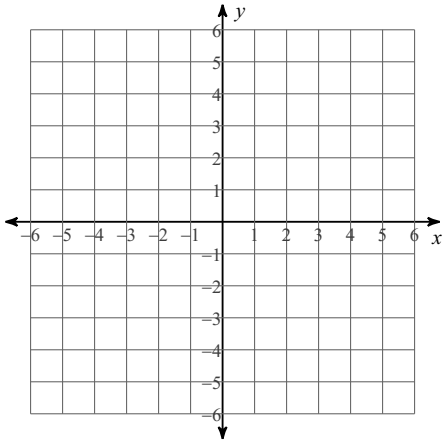
© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

List all possible combinations.

54) 1, 2, 3, 4, taken two at a time

Sketch the graph of each line.

55) $2x - 5y = 0$



© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Prob & Stat Name_____

© 2021 Kuta Software LLC. All rights reserved.

Summer Assignment

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

1) Life Expectancy

State	Years	State	Years	State	Years	State	Years	State	Years
West Virginia	74.1	District of Columbia	77.9	Wisconsin	79.8	North Dakota	80.2	Maryland	81
Mississippi	74.2	South Carolina	78.3	Nebraska	79.8	Washington	80.3	Ohio	81
South Dakota	74.3	Kansas	78.6	Iowa	79.8	Vermont	80.4	Oregon	82
Kentucky	74.7	Arizona	79.3						

Median = 79.8, Mean = 78.57, Range = 7.9, Q_1 = 76.3, Q_3 = 80.35 and IQR = 4.05

Find the probability of each event.

2) A basketball player has a 50% chance of making each free throw. What is the probability that the player makes exactly six out of eleven free throws?

$\frac{231}{1024} \approx 22.559\%$

Find the number of possibilities in each scenario.

3) There are 300 people at a meeting. They each shake hands with everyone else. How many handshakes were there?

44,850

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

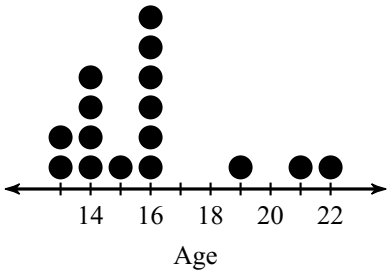
4) Large US Cities

City	Population	City	Population	City	Population	City	Population
Birmingham	212,237	Norfolk	242,803	Stockton	291,707	Seattle	608,660
Irvine	212,375	Lincoln	258,379	Cincinnati	296,943	Baltimore	620,961
Garland	226,876	Greensboro	269,666	Pittsburgh	305,704	San Antonio	1,327,407
Orlando	238,300	Newark	277,140	Colorado Springs	416,427		

Median = 277,140, Mean = 387,039, Range = 1,115,170, Q_1 = 238,300, Q_3 = 416,427 and IQR = 178,127

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

5) Age at First Job



Median = 16, Mean = 15.94,
Range = 9, Q_1 = 14, Q_3 = 16 and
IQR = 2

Solve each equation by factoring.

6) $b^2 - 40 = 3b$

$\{8, -5\}$

Evaluate each expression.

7) $\dfrac{26 + 2 - 4}{6}$

4

8) ${}_{21}C_{16}$

20,349

Find the probability of each event.

9) One day, eleven babies are born at a hospital. Assuming each baby has an equal chance of being a boy or girl, what is the probability that at least ten of the eleven babies are girls?

$\dfrac{3}{512} \approx 0.586\%$

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

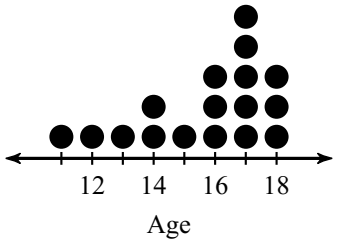
Find the number of possibilities in each scenario.

10) Carlos and Mofor are planning trips to three countries this year. There are 4 countries they would like to visit. One trip will be one week long, another two days, and the other two weeks.

24

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

11) Age at First Job



Median = 16, Mean = 15.65,
Range = 7, Q_1 = 14, Q_3 = 17 and
IQR = 3

Find the number of possibilities in each scenario.

12) Ming has homework in four subjects. She is deciding what order to complete them in.

24

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Write the slope-intercept form of the equation of the line through the given point with the given slope.

13) through: $(3, 5)$, slope = 3

$y = 3x - 4$

Simplify.

14) $\sqrt[3]{192m^4}$

$4m\sqrt[3]{3m}$

Solve each equation by factoring.

15) $26n^2 - 178n + 110 = 2n^2 + 6n - 2$

$\left\{\frac{2}{3}, 7\right\}$

Evaluate each using the values given.

16) $j + 2 - h - 3k$; use $h = 9$, $j = -7$, and $k = 8$

-38

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Solve each equation.

17) $-9(n-8)+4(n-9)=-2n+6n$

$\{4\}$

18) $|6k-1|=1$

$\left\{\frac{1}{3}, 0\right\}$

Solve each equation by factoring.

19) $(3a+1)(a+1)=0$

$\left\{-\frac{1}{3}, -1\right\}$

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

20) Age at First Job

11	13	13	13	13	13	14
15	15	16	16	17	17	18
18	18	22				

Median = 15, Mean = 15.41,
Range = 11, Q_1 = 13, Q_3 = 17.5 and
IQR = 4.5

Simplify each expression.

21) $-3b(-5b-3)-6b(7b+2)$

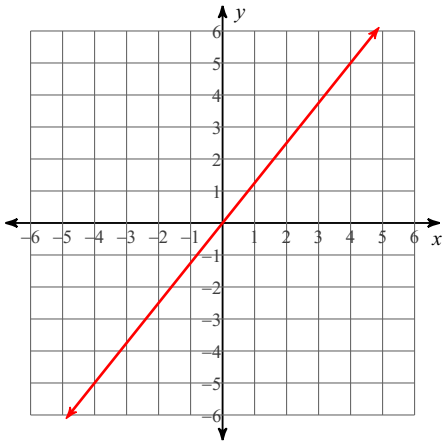
$-27b^2-3b$

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

Sketch the graph of each line.

22) $y = \frac{5}{4}x$



Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

23) Monthly Revenue

Stem	Leaf
4	0 0 1 1 4 7
5	2 5 6 7 9
6	1 2 6 8
7	1

Key: 4|7 = 47,000

Median = 55,500,
Mean = 53,750, Range = 31,000,
Q_1 = 42,500, Q_3 = 61,500 and
IQR = 19,000

Solve each equation.

24) $-37 + 8m = -5(-7m + 2)$

$\{-1\}$

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

25) Injuries Due to Distracted Driving per Month

Stem	Leaf
5	3 8 8
6	1 8
7	5
8	1 4 5 7
9	2 2 3 6 7
10	2

Key: 7|5 = 7,500

Median = 8,450, Mean = 8,012.5,
Range = 4,900, Q_1 = 6,450, Q_3 = 9,250 and
IQR = 2,800

Find the probability of each event.

26) A class has nine boys and five girls. If the teacher randomly picks nine students, what is the probability that she will pick all boys?

$\frac{1}{2002} \approx 0.05\%$

Factor each completely.

27) $300 - 192x^2$

$12(5 + 4x)(5 - 4x)$

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

Find the probability of each event.

28) A six-sided die is rolled eleven times. What is the probability that the die will show an even number exactly three times?

$\frac{165}{2048} \approx 8.057\%$

Solve each equation.

29) $-4(-2 + 3r) + 11(-1 + r) = 1 - 10r + 1 + 8r$

$\{5\}$

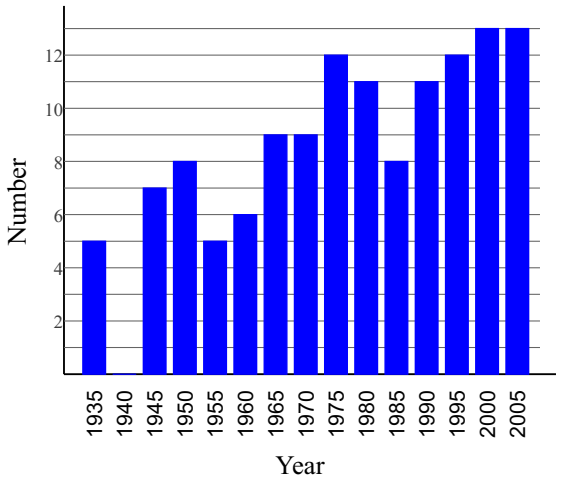
Evaluate each expression.

30) $9 + (-8) - 10 - (-7)$

-2

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

31)



Median = 9, Mean = 8.6, Range = 13,
Q_1 = 6, Q_3 = 12 and IQR = 6

Simplify each expression.

32) $6m(8m - 1) + 7m(-5m - 5)$

$13m^2 - 41m$

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

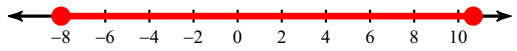
List all possible combinations.

33) 4, 5, 6, 7, taken two at a time

45 56
46 57
47 67

Solve each inequality and graph its solution.

34) $|6k - 8| \leq 56$



$-8 \leq k \leq \frac{32}{3}$

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

35) Age Assumed Office

Senator	Age
Marco Rubio	39
Chris Murphy	39
Patty Murray	42
David Vitter	43

Senator	Age
Chris Coons	47
Jon Tester	50
John Barrasso	54

Senator	Age
Ron Johnson	55
Tom Coburn	56
Al Franken	58

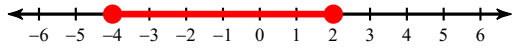
Senator	Age
Dianne Feinstein	59
Pat Roberts	60
Johnny Isakson	60

Senator	Age
Richard Blumenthal	64
Mazie Hirono	65
Dan Coats	67

Median = 55.5, Mean = 53.63, Range = 28, $Q_1 = 45$, $Q_3 = 60$ and IQR = 15

Solve each inequality and graph its solution.

36) $|3 + 3r| - 9 \leq 0$



$-4 \leq r \leq 2$

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Factor each completely.

37) $8x^3 - 20x^2 + 6x - 15$

$(4x^2 + 3)(2x - 5)$

Evaluate each expression.

38) ${}_{19}C_{13}$

27,132

Factor each completely.

39) $2n^3 + 4n^2 + n + 2$

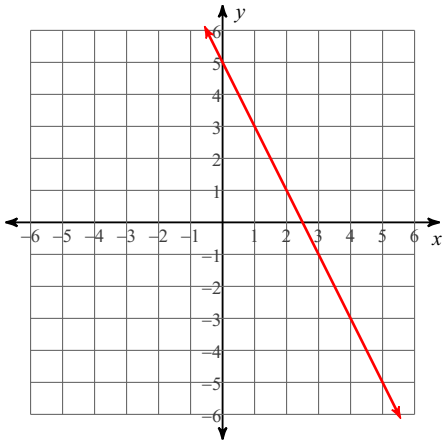
$(2n^2 + 1)(n + 2)$

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

Sketch the graph of each line.

40) $-4x - 2y = -10$



Find the number of possibilities in each scenario.

41) The student body of 100 students wants to elect three representatives.

161,700

Factor each completely.

42) $v^2 + 10v + 25$

$(v + 5)^2$

Find the number of possibilities in each scenario.

43) The batting order for nine players on a 12 person team.

79,833,600

44) There are 280 people at a meeting. They each give a Valentine's Day card to everyone else. How many cards were given?

78,120

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

Evaluate each using the values given.

45) $y(x + 9 - z) - z$; use $x = 9$, $y = 3$, and $z = -8$

86

Write the slope-intercept form of the equation of the line through the given point with the given slope.

46) through: $(4, 3)$, slope = 2

$y = 2x - 5$

Solve each equation.

47) $-12 - 6x = -2(x - 6)$

$\{-6\}$

Simplify.

48) $2\sqrt{28x^4}$

$4x^2\sqrt{7}$

In each problem, angle C is a right angle. Solve each triangle rounding answers to the nearest tenth.

49) $m\angle B = 62°$, $b = 8$ in

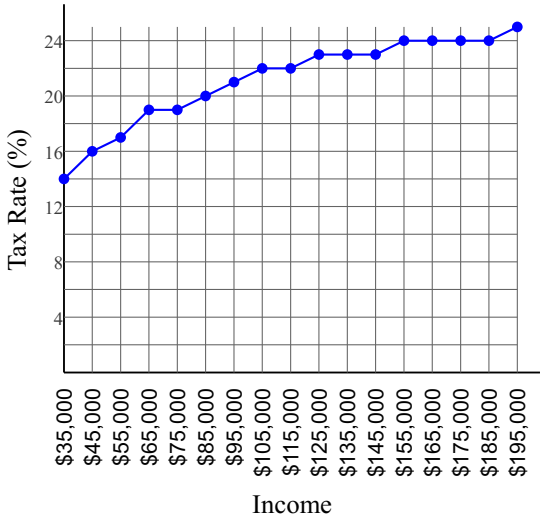
$m\angle A = 28°$, $a = 4.3$ in, $c = 9.1$ in

© 2021 Kuta Software LLC. All rights reserved.

Made with Infinite Pre-Algebra.

Find the median, mean, range, lower quartile, upper quartile, and interquartile range for each data set.

50) Federal Income Tax



Median = 22, Mean = 21.18, Range = 11,
$Q_1 = 19$, $Q_3 = 24$ and IQR = 5

Solve each equation.

51) $5\left|5n - 6\right| = 30$

$\left\{\frac{12}{5}, 0\right\}$

Simplify.

52) $6\sqrt{392x}$

$84\sqrt{2x}$

Solve each equation by factoring.

53) $126k^2 = 24k + 192$

$\left\{\frac{4}{3}, -\frac{8}{7}\right\}$

© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.

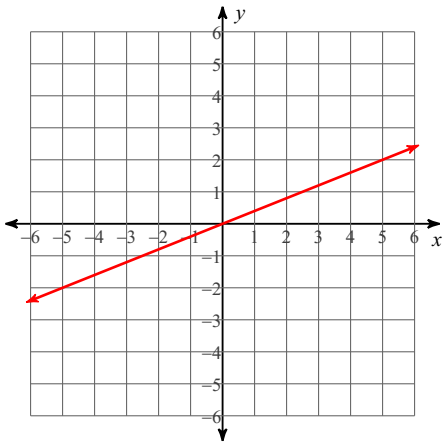
List all possible combinations.

54) 1, 2, 3, 4, taken two at a time

12 23
13 24
14 34

Sketch the graph of each line.

55) $2x - 5y = 0$



© 2021 Kuta Software LLC. All rights reserved. Made with Infinite Pre-Algebra.