Name_____ Date_____

Chapter 15 Final Review

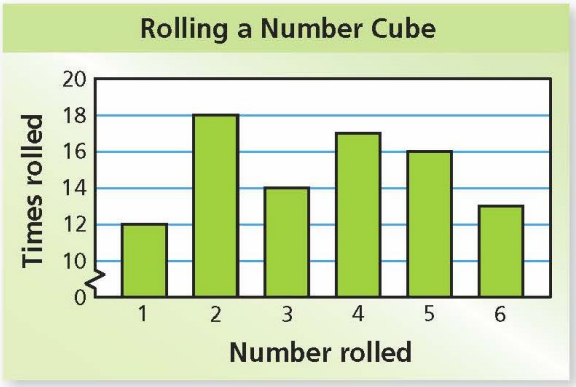
You randomly choose one game piece. (a) Find the number of ways the event can occur. (b) Find the favorable outcomes of the event.

1. Choosing green

2. Choosing *not* yellow

3. Use the Fundamental Counting Principle to find the total number of different sunscreens possible.

Sunscreen	
SPF	10, 15, 30, 45, 50
Type	Lotion, Spray, Gel



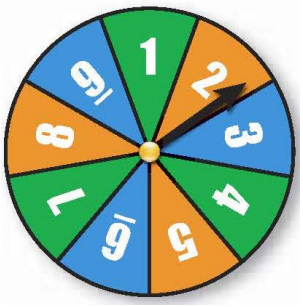
Use the bar graph to find the experimental probability of the event.

4. Rolling a 1 or a 2

5. Rolling an odd number

6. *Not* rolling a 5

Use the spinner to find the theoretical probability of the event(s).



7. Spinning an even number

8. Spinning a 1 and then a 2

Tell whether the events are *independent* or *dependent*. Explain.

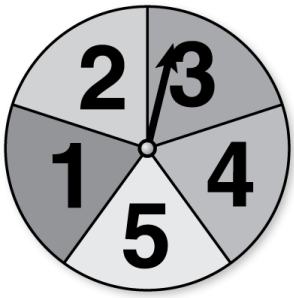
9) You spin a spinner twice.

First Spin: You spin a 2.
Second Spin: You spin an odd number.

10) Your committee is voting on the leadership team.

First Vote: You vote for a president.
Second Vote: You vote for a vice president.

You spin the spinner and flip a coin. Find the probability of the compound event.



11) Spinning an odd number and flipping heads

12) *Not* spinning a 5 and flipping tails

You randomly choose one of the tiles. Without replacing the first tile, you choose a second tile. Find the probability of the compound event.

13) Choosing a 6 and then a prime number

14) Choosing two odd numbers

You roll a number cube twice. Find the probability of the compound event.

15) Rolling two numbers whose sum is 2

16) Rolling an even number and then an odd number

Identify which one among the pair of groups is the population and which one is the sample.

17) All students in a school

30 students in the school

18) 75 strawberries in the field

All the strawberries in the field

19) You want to know the number of students in your school who read some of the newspaper at least once a week. You survey 30 random students that you meet in the hallway between classes.

a) What is the population of your survey?

b) What is the sample of your survey?

c) Is the sample biased or unbiased? Explain.

For each problem, which sample is better for making a prediction? Explain.

20)

Predict the number of residents in St. Lucie County who own a home.	
Sample A	A random sample of 100 residents in the county
Sample B	A random sample of 100 residents in the city of Fort Pierce

21)

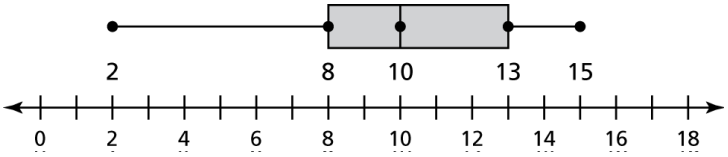
Predict the number of people at a beach who are wearing sunscreen.	
Sample A	A random sample of 50 people at the beach
Sample B	A random sample of 5 people at the beach

Determine whether you would survey the population or a sample. Explain.

22) You want to know the average weight of the members of your family.

23) You want to know the number of grocery stores in Florida that carry your favorite cereal.

24) The box-and-whisker plot represents the numbers of cocoons in each butterfly tent.



a) What percent of the butterfly tents contain at most 10 cocoons?

b) Are the data more spread out below the first quartile or above the third quartile? Explain.

c) Find and interpret the interquartile range of the data.

d) What are the most appropriate measures to describe the center and variation of the distribution?

Name_____ Date_____

Chapter 10 Final Review

Write the product using exponents.

1) $\frac{1}{5} \bullet \frac{1}{5} \bullet \frac{1}{5} \bullet \frac{1}{5} \bullet \frac{1}{5}$

2) $(-2) \bullet (-2) \bullet (-2)$

3) $y \bullet y \bullet y \bullet y \bullet y \bullet y$

4) $4 \bullet 4 \bullet 4 \bullet c \bullet c$

Evaluate the expression.

5) -2^4

6) $(-3)^3$

7) $\frac{3^4}{3^5}$

8) $(-2)^4$

Complete the following:

9) When you multiply powers with the same base, you _____.

10) When you have exponents inside and outside the parenthesis, you _____.

11) When you divide powers with the same base, you _____.

12) Evaluate: $542{,}897^0$

Simplify the expression. Write your answer as a power.

13) $(-1)^3 \bullet (-1)^2$

14) $(b^4)^2$

Simplify the expression.

15) $(4f)^3$

16) $\left(-\frac{3}{8}t^2\right)^2$

Simplify the expression. Write your answer as a power.

17) $\dfrac{(-2)^{10}}{(-2)^{5}}$

18) $\dfrac{5^{4} \bullet 5^{9}}{5^{6}}$

19) $\dfrac{x^{14}}{x^{4} \bullet x^{2}}$

20) $\dfrac{y^{3}}{y^{11}} \bullet \dfrac{y^{21}}{y^{9}}$

Simplify the expression. Write the expression using ***only positive exponents***.

21) 3^{-4}

22) $\dfrac{8^{3}}{8^{5}}$

23) $5^{-12} \bullet 5^{12}$

24) $\dfrac{1}{4^{-5}} \bullet \dfrac{1}{4^{8}}$

25) $6^{-1} \bullet 6^{-2}$

26) $\dfrac{2^{6}}{2^{-8} \bullet 2^{10}}$

27) $8x^{-3}$

28) $5^{-3} \bullet m^{6}$

29) $\dfrac{7p^{5}}{p^{-1}}$

30) $\dfrac{10t^{-5}}{t^{-2}}$

31) $\dfrac{15d^{4}}{3d^{9}}$

32) $6w^{-2} \bullet 4w^{2}$

33) $4c^{-5}c^{2}$

34) $\dfrac{3x^{2}}{9x^{5}}$

35) Is x^4x^5 equivalent to x^{20}? Explain. If not, what expression is equivalent to x^4x^5?

Tell whether the number is written in scientific notation. Explain.

36) 0.3×10^4

37) 12×10^{-7}

Write the number in standard form.

38) -2.7×10^{-2}

39) 4×10^6

Write the number in scientific notation.

40) 0.0031

41) 741,000

Order the numbers from least to greatest.

42) $3.9 \times 10^7,\ 3.08 \times 10^7,\ 3.88 \times 10^7$

43) $6.5 \times 10^{-4},\ 5.2 \times 10^{-3},\ 8.1 \times 10^{-5}$

Evaluate the expression. Write your answer in scientific notation.

44) $\left(4.1 \times 10^3\right) + \left(3.7 \times 10^2\right)$

45) $\left(9.3 \times 10^{-3}\right) - \left(6.9 \times 10^{-4}\right)$

46) $\left(1.2 \times 10^{-3}\right) \times \left(4 \times 10^{5}\right)$

47) $\left(8 \times 10^{-6}\right) \div 1.6$

Name_____ Date_____

Unit 3 - Chapter 7 Final Review

Find the square root(s).

1. $-\sqrt{400} =$ _____

2. $\sqrt{2.25} =$ _____

3. $-\sqrt{\frac{36}{16}} =$ _____

4. $\pm\sqrt{\frac{98}{32}} =$ _____

Evaluate the expression.

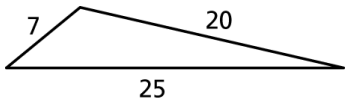
5. $3\sqrt{81} - \left(\sqrt{40}\right)^2$

6. $4 - 2\sqrt{\frac{289}{4}}$

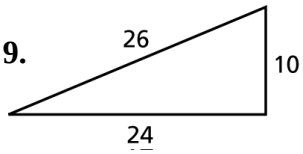
7. $-2\left(\sqrt{64} - 3\right)$

Prove whether the triangle with the given side lengths is a right triangle.

8.



9.



10. The side of the clip on a clip board appears to be a right triangle. The leg lengths are 2 millimeters and 2.1 millimeters and the hypotenuse is 2.9 millimeters. Is the side of the clip a right triangle?

11. On the Junior League baseball field, you run 60 feet to first base and then 60 feet to second base. You are out at second base and then run directly along the diagonal to home plate. Find the total distance that you ran. Round your answer to the nearest tenth. *(Hint: Draw a picture to help you solve).*

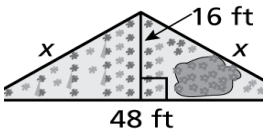
Tell whether a triangle with the given side lengths is a right triangle.

12. 8, $\sqrt{54}$, 11

13. $\sqrt{39}$, 8, 5

14. 11 in, 60 in, 61 in

15. You are creating a flower garden in the triangular shape shown. You purchase edging to go around the flower garden. The edging costs $1.50 per foot. What is the cost of the edging? ***Round your lengths to the nearest whole number.***



Tell whether the rational number is a reasonable approximation of the square root.

16. $\frac{277}{160}, \sqrt{3}$

17. $\frac{590}{160}, \sqrt{17}$

Classify the real number. Choose <u>all</u> that apply from the given list below. *(whole, natural, integer, rational, irrational)*

18. $-\sqrt{14}$

19. $1.\overline{3}$

20. 2.375

21. $\sqrt{100}$

Estimate the square root to the nearest (a) integer and (b) tenth.

22. $\sqrt{33}$

integer : _____ *10^{th}:* _____

23. $\sqrt{630}$

integer : _____ *10^{th}:* _____

24. $-\sqrt{8}$

integer : _____ *10^{th}:* _____

25. $\sqrt{\frac{30}{2}}$

integer : _____ *10^{th}:* _____

Find the missing value using the Pythagorean Theorem.

26. A swimming pool is in the shape of a right triangle. One leg has a length of 10 feet and one leg has a length of 15 feet. Find the length of the hypotenuse. *(Estimate the length to the nearest integer if necessary).*

27. You and a friend start off standing in the exact same point. Your friend walks a straight line 8 feet North and you walk a straight line 9 feet East. What is the approximate measure of the distance between you if you were to measure the direct route?

28. Find the length of the missing leg of a right triangle.

a. $a = 5$ cm, $b =$ _____, $c = 13$ cm.

b. $a =$ _____, $b = \sqrt{29}$ ft, $c = 15$ ft.

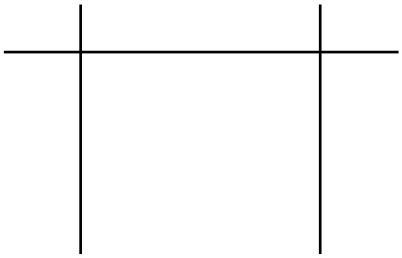
.

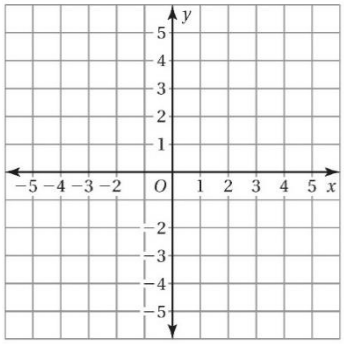
Name_____ Date_____

Unit 4 - Chapter 4 Final Review

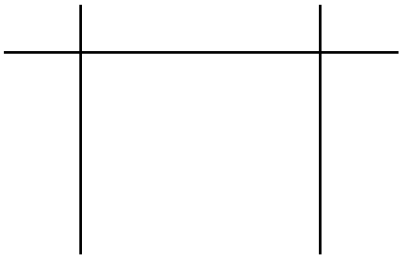
Graph both linear equations on the coordinate plane on the right. Make sure you use an input/output table with at least 3 ordered pairs for each.

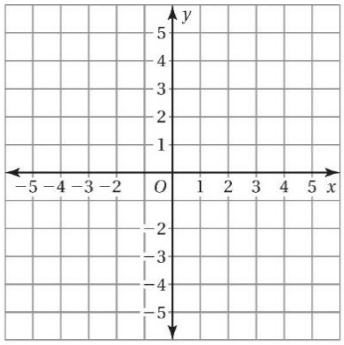
1) $y = 4x - 5$





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

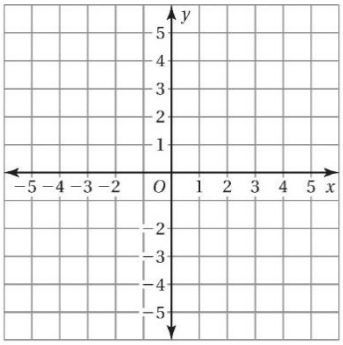




Graph both of the equations on the coordinate plane on the right. You may make an input/output table if you wish.

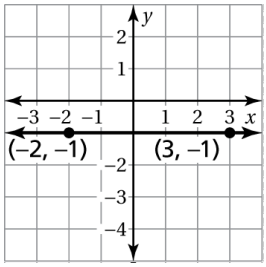
3) $y = -5$

4) $x = -2$



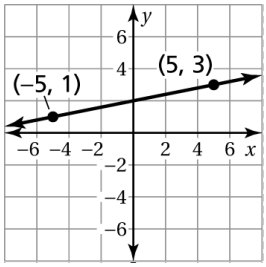
5) The slope of any line can be written as a ratio that represents its _____ over its _____.

Tell whether the slope of the line is positive, negative, zero, or undefined. Then find the slope if it exists.

6) 

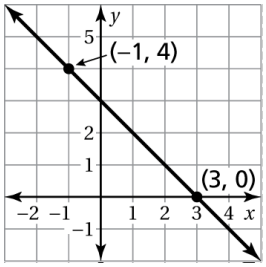
Kind of slope: _____

m = _____

7) 

Kind of slope: _____

m = _____

8) 

Kind of slope: _____

m = _____

9) The slopes of parallel lines are the _____.

10) Find the slope of the line that passes through the points. Write your answer in simplest form.

a) (-1, -4 and (1, 4) ***m*** = _____

b) (5, 8) and (5, -3) ***m*** = _____

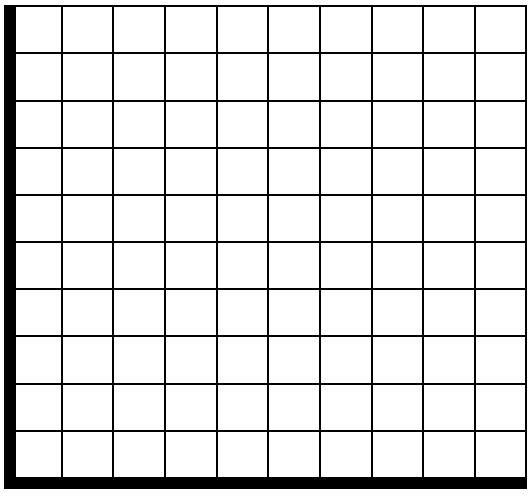
c) (9, -6) and (-4,-6) ***m*** = _____

d) (1, 2) and (-3, 2) ***m*** = _____

11) A plant is 2 inches tall when you purchase it and grows 3 inches per month. Write an equation that represents the height *y* (in inches) of a plant that you purchased *x* months ago.

a) Equation:

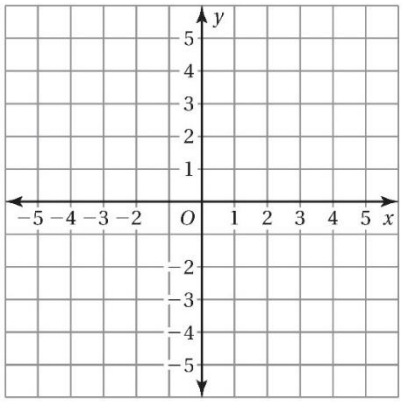
b) Graph this equation and make sure to:
- Label you axis.
- Use at least 4 ordered pairs.

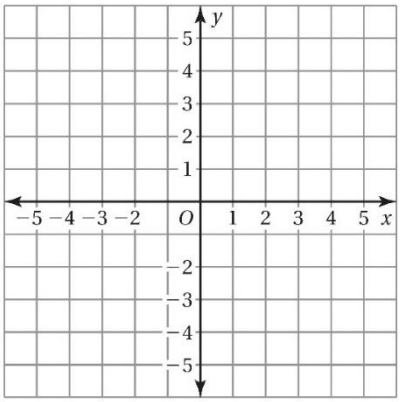


Graph each equation using the slope and the *y*-intercept only.

12) Graph $y = -\frac{3}{4}x + 3$

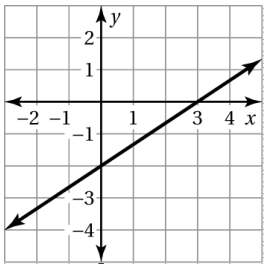
13) Change to slope intercept form and graph
$5x - 3y = 15$





Identify the *x*-intercept and the *y*-intercept of the graph.

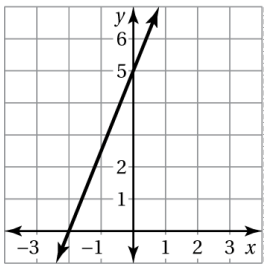
14)



x-intercept : _____

y-intercept : _____

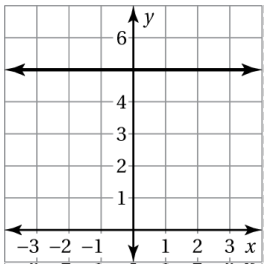
15)



x-intercept : _____

y-intercept : _____

16)



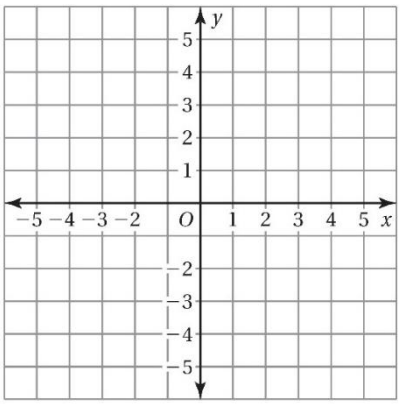
x-intercept : _____

y-intercept : _____

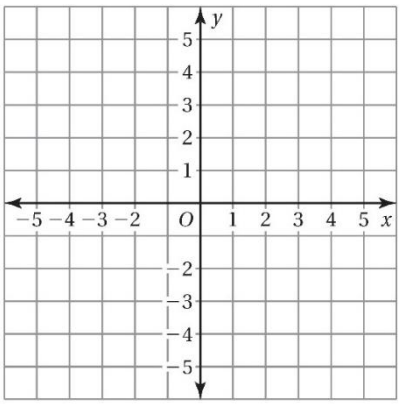
Find the *x*-intercept and the *y*-intercept of each equation, and then graph it.

17) $-4x + 5y = 20$

x-intercept : _____ *y*-intercept : _____



18) $6x - 3y = 12$



x-intercept : _____ *y*-intercept : _____

22) The total amount of fiber (in grams) in a package containing *x* apples and *y* oranges is given by the equation $5x + 10y = 110$.

a) Find and interpret the *y*-intercept.

b) Find and interpret the *x*-intercept.

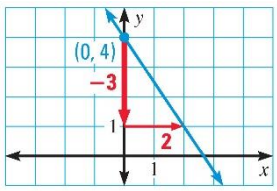
c) How many grams of fiber does an orange contain?

d) How many grams of fiber does an apple contain?

e) Is it possible for the package to contain 15 apples? Explain.

Write an equation of the line shown in slope-intercept form.

19)



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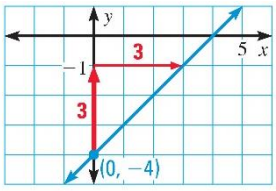
20)



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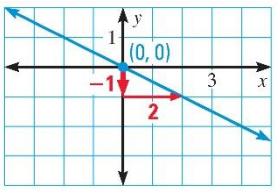
21)



_____

Write an equation of the line that passes through the following points in **slope-intercept** form.

22) $(-4, -1), (0, 5)$

23) $(0, -7), (1, 4)$

24) $(0,-8), m = 5$

25) $(7, 2), (-12, 2)$

Name_____ Date_____

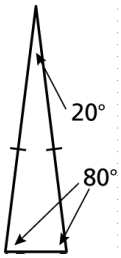
Unit 5 - Chapter 12 Final Review

Terms that you should know:

- ☐ Right Angle
- ☐ Acute Angle
- ☐ Obtuse Angle
- ☐ Adjacent Angles
- ☐ Vertical Angles
- ☐ Complementary Angles
- ☐ Supplementary Angles
- ☐ Right Triangle
- ☐ Acute Triangle
- ☐ Obtuse Triangle
- ☐ Scalene Triangle
- ☐ Isosceles Triangle
- ☐ Equilateral Triangle
- ☐ Equiangular Triangle
- ☐ Trapezoid
- ☐ Kite
- ☐ Parallelogram
- ☐ Rhombus
- ☐ Rectangle
- ☐ Square
- ☐ Scale
- ☐ Scale Factor
- ☐
- ☐

Complete the following:

1) Which statement describes the triangle shown below?



a) It is isosceles and acute

b) It is isosceles and obtuse.

c) It is scalene and acute.

d) It is scalene and obtuse.

2) Which of the following are always congruent?

a) adjacent angles

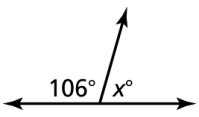
b) vertical angles

c) complementary angles

d) supplementary angles

Tell whether the angles are *adjacent* or *vertical*. Then find the value of *x*.

3)



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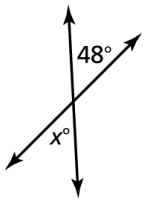
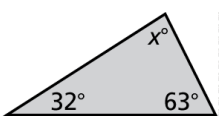


Find the value of *x*. Then classify the triangle.

5)



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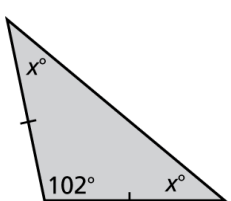
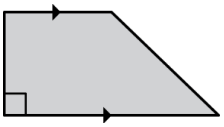
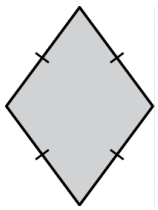
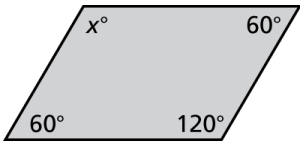


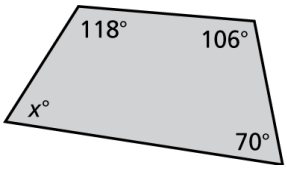
Classify the quadrilateral.

7) 

8) 

Find the value of *x*.

9) 

10) 

11) Find the missing dimension. Use the scale factor 1 : 15.

Item	Model	Actual
Tree	Height: __?__ ft	Height: 30 ft
Door	Height: 10 in.	Height: __?__ in.