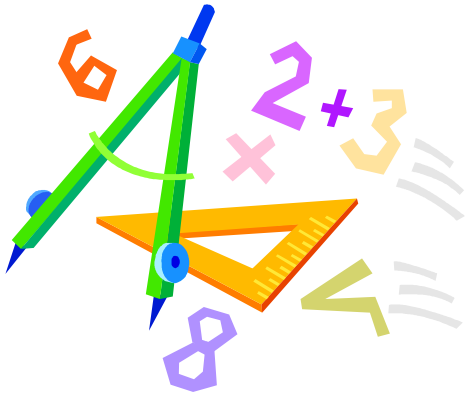
Math Summer Work 2022

Rising 6th Grade (entering 7th grade in Fall 2022) – accelerated math



No Calculators
This workbook will be collected in September.

Lesson One- Decimals

***Part 1*: In exercises 1 – 5, compare the numbers. Write <, >, or =.**

1) 0.039 ___ 0.390 **2)** 4.96 ___ 5.02 **3)** 0.01 ___ 0.008

4) 1.6849 ___ 1.685 **5)** 4.707 ___ 4.770

***Part 2:* In exercises 6 – 10, find the sum or difference.**

6) 8.74 + 9.327 **7)** 6.5 − 0.0032 **8)** 10 − 1.02

9) 1.25 + 0.025 **10)** 0.47 + 0.463 + 75.6

***Part 3:* In exercises 11 – 15, find the product or quotient.**

11) 64.2 × 0.7 **12)** 0.73 · 42 **13)** 12.92 ÷ 3.4

14) 3.618 ÷ 0.67 **15)** 0.69 × 0.54

***Part 4:* In exercises 16 – 20, write the decimal as a fraction *<u>in simplest form</u>*.**

16) .626 **17)** .2 **18)** .65 **19)** .06875 **20)** 0.375

***Part 5)* In exercises 21 – 25, write the fraction as a decimal.**

21) $\frac{1}{8}$ **22)** $\frac{2}{3}$ **23)** $\frac{1}{20}$ **24)** $\frac{3}{16}$ **25)** $\frac{3}{4}$

Lesson Two-----Order of Operations and Exponents

Part 1: **In exercises 1 – 5, evaluate the expressions. Remember to use order of operations.**

1) $3 \times 5 + 12 \div 3$ **2)** $3(6 + 8) \div 7$ **3)** $6 + (10 - 7) \cdot 2$

4) $3[16 - (3 + 7) \div 5]$ **5)** $14 - 8 + 4 \cdot 2^3$

Part 2: **In exercises 6 & 7, write the product as a power**

6) $6 \times 6 \times 6$ **7)** $m \cdot m \cdot m \cdot m \cdot m$

Part 3: **In exercise 8 – 12, evaluate the expression.**

8) 3^4 **9)** $\sqrt{81}$ **10)** 5^3 **11)** four cubed **12)** two to the fifth power

Part 4: **In exercises 13 – 18, evaluate the expression when a = 2 and b = 7**

13) ab **14)** $5a + 2b$ **15)** $(24a - 6) \div b$

16) $(b - a)^3$ **17)** $(a + b) \div (b - 2a)$ **18)** $6(b - a) \div (3a)$

Lesson Three- Solving Equations

Part 1: **In exercises 1 – 6, solve the equation. Show all of your work, including the check.**

1) $x - 8 = -8$ **2)** $-1 = t - 17$ **3)** $-20 + p = 14$

4) $m-25=-33$ **5)** $-11=y+12$ **6)** $36+k=47$

Part 2: **In exercises 7 -12, solve the equation. Make sure to show all of your work, including the check.**

7) $4x=16$ **8)** $56=7n$ **9)** $\frac{n}{4}=25$

10) $\frac{b}{20}=2$ **11)** $16=\frac{x}{4}$ **12)** $4.8b=36$

Lesson Four—Distributive Property

Part 1: **In exercises 1 – 5, use the distributive property to find the equivalent expression.**

1) $4(x+9)$ **2)** $16(z+3)$ **3)** $a(b+4)$ **4)** $r(s+t)$ **5)** $12(s+t+w)$

Part 2: **In exercises 6 – 14, simplify the expression by combining like terms.**

6) $r+2s+3r$ **7)** $11w+9z+3z+5w$ **8)** $7a-2a+8b-2b$

9) $3x+2x+y+2y-3$ **10)** $-3x+2x-9y-2x$ **11)** $r+2s-(-3r)-s$

12) $xy+x^2+xy$ **13)** $6xy+x^2+x^2$ **14)** $p+3+9q+9+14p$

Part 3: **In exercises 15 – 20, use the distributive property and combining like terms to simplify the expression.**

15) $2(2x+1)+3x-5x$ **16)** $8d-2(3d-5d)$ **17)** $3(a+4)+b-5-a+7(b-3)$

18) $3.2(2z-3x)+4(1.1y+x)-2z$ **19)** $7(y-1.3)+2.4-5.3y$ **20)** $4(3c-4)=2-4c$

Lesson Five- Integers

Part 1: **In exercises 1 – 10, use <, >, or = to compare the integers.**

1) -8 ☐ -18 **2)** -68 ☐ -687 **3)** 2 ☐ -2 **4)** -2 ☐ -7

5) -13 ☐ -131 **6)** -54 ☐ -45 **7)** -7 ☐ -6 **8)** -8 ☐ -8

9) -50 ☐ 50 **10)** -73 ☐ 3

Part 2: **In exercises 1 -10, add the integers.**

11 -9 + 15 **12**) (-17) + (-5) **13**) 24 + 7 **14**) -20 + 15

15) -40 + 21 **16)** -12 + (-19) **17)** -8 + 2 **18)** 17 + (-8)

19) 7 + (-9) **20)** -4 + (-9)

Part 3: **In exercises 21- 30, subtract the integers.**

21) 5 – (-16) **22** -7 – 8 **23)** 8 – (-30) **24)** 7 -14

25) 45 – (-20) **26)** 2 - 10 **27)** 11 -13 **28)** 64 – (-8)

29) -13 – 15 **30)** - 4 – (-6)

Part 4: **In exercises 1 – 10, find the product.**

1) 9 × (-3) **2)** 100(12) **3)** 13 · (-9) **4)** -7 · 20

5) (8)(-11) **6)** 12(-5) **7)** -9 × -4 **8)** 6(30)

9) -50 · 3 **10)** -7(-14)

Part 5: **In exercises 11 -20, find the quotient.**

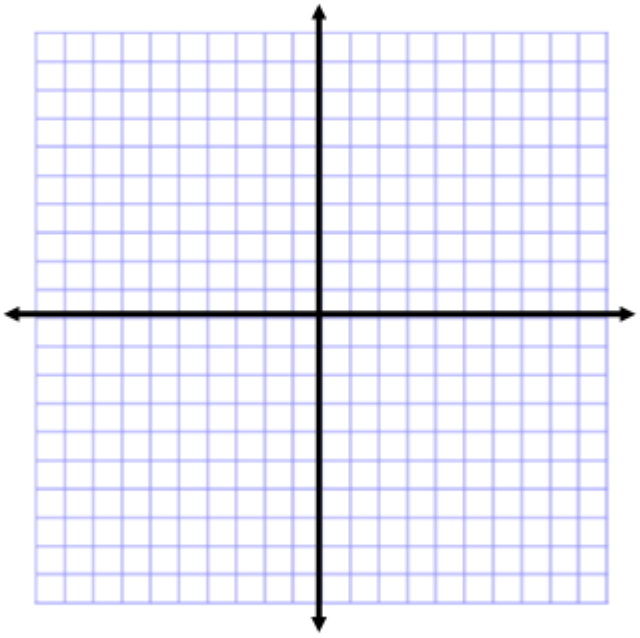
11) 60 ÷ (-15) **12)** -42 ÷ (-6) **13)** -68 ÷ (-4) **14)** 84 ÷ (-12)

15) 58 ÷ (-2) **16)** -44 ÷ (-22) **17)** $\frac{-56}{4}$ **18)** -120 ÷ (-3)

19) $\frac{-150}{25}$ **20)** 45 ÷ (-9)

Lesson Six—Coordinate Planes

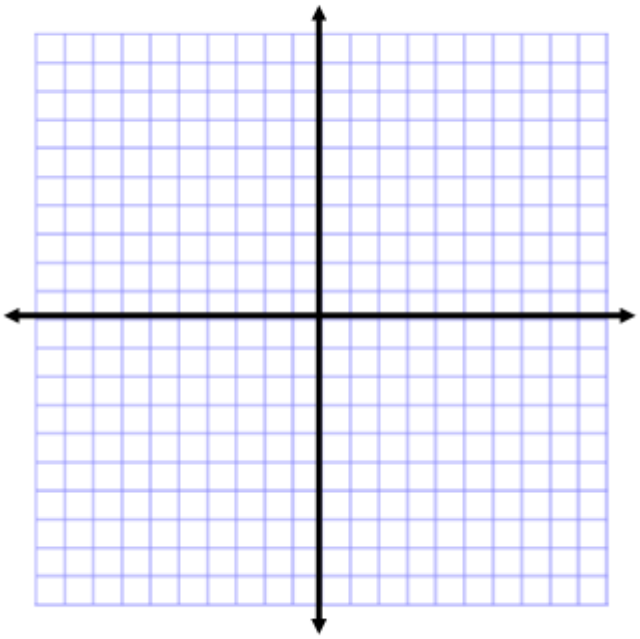
Part 1: **In this exercise, label the *x* and y and the quadrants of the coordinate plane.**



Part 2: **In this exercise complete the table of values by solving the equation to find the value of *y*. Write the coordinate pairs and then graph them on the coordinate plane.**

$$2 + x = y$$

x	**-3**	**-2**	**-1**	**0**	**1**	**2**
y						
(x,y)						



Lesson Seven----Single step and Multi-step equations

Part 1: **In exercises 1 – 9, solve the equation. Check your answer and show all of your work.**

1) $3y-4=2$ **2)** $15=-4p+7$ **3)** $11=\frac{h}{6}+8$

4) $6+2c=15$ **5)** $29=-5a+4$ **6)** $-7+\frac{z}{4}=5.2$

7) $\frac{x}{4}-2=-7$ **8)** $\frac{2x}{3}=-8$ **9)** $-\frac{5m}{2}=35$

Part 2: **In exercises 10 - 15, solve the multi-step equations. Be sure to check your answer and show all of your work.**

10) $2a+3a=15$ **11)** $s+5s-3s=21$ **12)** $6m-2m-6=-60$

13) $5-3(x+1)=5$ **14)** $4-(x+1)=8$ **15)** $3p-(6p+24)=0$

Lesson Eight- Prime factorization, LCM and GCF

Part 1: **In exercises 1 & 2, use a tree diagram to write the prime factorization of the composite number or monomial.**

1) -585

2) $54w^3z^4$

Part2: **In exercises 3 – 8, find the GCF of the composite numbers or monomials.**

3) 56 and 84

4) 122 and 45

5) 96 and 120

6) $6xy$ and $4xy^2$

7) $15y$ and $9x^2y^2$

8) $5xy^3$ and $10x^2y^2$

Part 3: **In exercises 9 – 14, find the LCM of the composite numbers or monomials.**

9) 14 and 21

10) 8 and 10

11) 45 and 75

12) $24t$ and $60st$

13) $9y^4$ and $12y$

14) $7s^3t$ and $49st^2$

Part 4: **In exercises 15 – 20, simplify the fraction.**

15) $\frac{36}{81}$ **16)** $\frac{48}{140}$ **17)** $\frac{-18x^2y}{24x}$

18) $\frac{35xy^2}{7x^2y^4}$

Lesson Nine-Evaluate the exponents and simplify

Part 1: **In exercises 1 – 15, evaluate the exponent.**

1) -5^4 **2)** $(-5)^4$ **3)** (-6^2) **4)** -6^2 **5)** 3^1

6) z^0 **7)** y^1 **8)** x^{-3} **9)** 3^{-3} **10)** $(-3)^{-3}$

11) -4^2 **12)** $3x^{-7}$ **13)** $2s^{-5}$ **14)** $-6m^{-1}$ **15)** $(-2)^{-5}$

Part 2: **In exercises 16 – 25, simplify the product.**

16) $x^3 \cdot x^5$ **17)** $z^7 \cdot z^5$ **18)** $3^2 \cdot 3^1$ **19)** $2^2 \cdot 2^3$ **20)** $5^{-5} \cdot 5^2$

21) $4^3 \cdot 4^{-3}$ **22)** $z^{-7} \cdot z^4$ **23)** $n^5 \cdot n^{-15}$ **24)** $8^{-2} \cdot 8^{-1}$ **25)** $3^{-10} \cdot 3^7$

Part 3: **In exercises 26 – 35, simplify the quotients.**

26) $\frac{5^8}{5^5}$ **27)** $\frac{z^{10}}{z^5}$ **28)** $\frac{d8}{d}$ **29)** $\frac{a^4}{a}$ **30)** $\frac{2^{12}}{2^6}$

31) $\frac{(-7)^7}{(-7)^4}$ **32)** $\frac{x^2}{x^7}$ **33)** $\frac{s^1}{s^3}$ **34)** $\frac{4^2}{4^4}$ **35)** $\frac{5^5}{5^7}$

Lesson Ten---Fractions

Part 1: **In exercises 1 – 10, find the sum or difference. Simplify if necessary.**

1) $\frac{2}{3}+\frac{1}{5}$ **2)** $\frac{4}{5}-\frac{1}{7}$ **3)** $\frac{2}{3}-\frac{3}{10}$ **4)** $\frac{1}{4}+\frac{3}{8}$ **5)** $\frac{2}{3}+\frac{5}{6}$

6) $-\frac{7y}{12}+\frac{4y}{15}$ **7)** $\frac{2x}{7}-\frac{x}{2}$ **8)** $\frac{9s}{4}-\frac{7s}{5}$ **9)** $\frac{4}{x}+\frac{1}{9}$ **10)** $\frac{16}{25n}-\frac{9}{10n}$

Part 2: **In exercises 11 – 20, find the sum or product. Simplify if necessary.**

11) $5\frac{2}{9}+2\frac{8}{9}$ **12)** $2\frac{5}{12}+6\frac{1}{6}$ **13)** $3\frac{4}{15}-1\frac{7}{15}$

14) $7\frac{2}{3}-2\frac{11}{12}$ **15)** $4\frac{5}{6}+2\frac{1}{6}$ **16)** $5\frac{2}{3}+2\frac{1}{8}$

17) $3-1\frac{5}{8}$ **18)** $6\frac{1}{4}-1\frac{7}{16}$ **19)** $2\frac{5}{12}+1\frac{3}{12}$

20) $6-3\frac{3}{4}$

Part 3: **In exercises 1 – 10, find the product or quotient. Simplify is necessary.**

1) $\frac{4}{7}\cdot\frac{3}{4}$ **2)** $\frac{3}{12}\cdot\frac{4}{6}$ **3)** $\frac{3}{6}\div\frac{4}{5}$ **4)** $\frac{3}{7}\div\frac{4}{5}$ **5)** $n\div1\frac{1}{4}$

6) $\frac{5x}{6}\cdot12$ **7)** $\frac{-13t}{20}\cdot\frac{-1}{2}$ **8)** $\frac{3b}{2}\div\frac{9b}{5}$ **9)** $\frac{-2}{x}\div\frac{3}{x}$ **10)** $(\frac{-5}{6})(\frac{-6a}{15})$

Part 4: **In exercises 11 – 20, find the product or quotient. Simplify if necessary.**

11) $1\frac{2}{5}\cdot3\frac{1}{3}$ **12)** $4\frac{1}{2}\cdot2\frac{3}{4}$ **13)** $\frac{1}{9}\cdot5\frac{2}{7}$

14) $2\frac{2}{3}\div1\frac{6}{7}$ **15)** $2\frac{1}{5}\cdot10$ **16)** $4\frac{5}{7}\times2\frac{2}{3}$

17) $6\frac{3}{4}\div9$ **18)** $7\frac{1}{8}\div4\frac{3}{4}$ **19)** $1\frac{1}{5}\div2\frac{1}{4}$

20) $5\frac{1}{4} \div \frac{7}{16}$

Lesson Eleven- Ratios and Proportions

Part 1: **In exercises 1 -5, determine if the quotient is a ratio. If possible simplify the ratio.**

1) $\frac{4in.}{12in.}$ _____ **2)** $\frac{3\,ft.}{12\,\text{sec}.}$ _____ **3)** $\frac{6balloons}{30balloons}$ _____

4) $\frac{6busses}{12students}$ _____ **5)** $\frac{36mi.}{24mi.}$ _____

Part 2: **In exercises 6 – 10, rewrite the quotient as a ratio and simplify.**

6) $\frac{12\,ft.}{5yds.}$ **7)** $\frac{8quarts}{3gallons}$ **8)** $\frac{4in.}{3\,ft.}$ **9)** $\frac{1day}{16hrs.}$ **10)** $\frac{2\,\text{min}.}{15\,\text{sec}.}$

Part 3: **In exercises 11 -15, rewrite the rate as a unit rate.**

11) $\frac{140mi.}{5gal.}$ **12)** $\frac{576beats}{8\,\text{min}.}$ **13)** $\frac{28in.}{8hrs}$

14) 20 ounce box of cereal for $4.19 **15)** $2.73 for 100 sheets of paper

Part 4: **In exercises 16 – 20, use what you know about proportions and state whether the statement is true or false.**

16) $\frac{4}{5}=\frac{15}{20}$ _____ **17)** $\frac{15}{12}=\frac{5}{3}$ _____ **18)** $\frac{8}{18}=\frac{16}{36}$ _____ **19)** $\frac{15}{75}=\frac{5}{15}$ _____

20) $\frac{3}{8}=\frac{12}{32}$ _____

Part 5: **In exercises 1 – 5, solve the proportion.**

1) $\frac{m}{6}=\frac{9}{54}$ **2)** $\frac{15}{75}=\frac{b}{5}$ **3)** $\frac{d}{5}=\frac{40}{100}$ **4)** $\frac{36}{9}=\frac{7}{3}$ **5)** $\frac{x}{8}=\frac{18}{2}$

Part 6: **In exercises 6 – 10, write the description as a proportion and then solve for the variable.**

6) *n* is to 9 as 10 is to 8

7) 35 is to 25 as *z* is to 5

8) *p* is to 21 as 11 is to 33

9) 28 is to *w* as 36 is to 9

10) 4 is to *x* as 6 is to 24

Part 7: **Use what you know about proportions to solve the word problems.**

11) You have drawn a design for a billboard. The design is 4ft. high. The letters on the design are 6 in. high. The actual billboard is 20 ft. high. How tall should you make the letters on the billboard?

12) You are at the top of a roller coaster hill that casts a 54 ft. shadow. Your 5-ft tall friend watching below casts a 1.5-ft shadow. How tall is the roller coaster hill?

Lesson Twelve—More Equations

In exercises 1- 12, solve the equation. Make sure to check your work and show all steps.

1) $3a+2=7a+10$

2) $5x+7=8(x-1)$

3) $13v=7(9-v)$

4) $2(z+5)=3z+14$

5) $9y-8=6y+7$

6) $\frac{7a-2}{3}=4$

7) $2.8y+8.6=9.12-1.2y$

8) $7.25p-3+p=14.325$

9) $7-2.65z=-4.4z$

10) $x-\frac{2}{3}x=\frac{3}{4}$

11) $\frac{9}{10}n+\frac{1}{5}=\frac{7}{10}n-\frac{3}{n}$

12) $\frac{6}{4}r-\frac{21}{8}=\frac{3}{4}r$

Lesson 13- Geometry

I. Triangles

For questions 1-3 find the length of the missing leg of the right triangle where c is the hypotenuse.

1. a = 6 b = _____ c = 10

2. a= 5 b = 12 c= _____

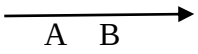
3. a = 9 b = 15 c= _____

Use the similar triangles-they have the same angles. Each triangle is a right triangle

4. **Find the ratio of u to x _____**
5. **solve for v _____**
6. **solve for w _____**
7. **What is the perimeter of triangle UVW _____**
8. **What is the area of Triangle UVW _____**
9. **A chimney sweep must place a 52-foot ladder against the wall of a home so that it reaches a point exactly 48 feet high. How far from the home should he place the ladder? _____**

II. Geometry Basics

Draw each figure and label.

Example: Draw a ray  A B

1. Line
2. Point
3. Line segment
4. Plane

III. Use a protractor to draw angles for exercises 1-5

1. Draw a 45° angle
2. Draw a 135° angle
3. Draw a 45° angle
4. Draw a 90° angle
5. Draw a 5° angle

Lesson 14- Sets

I. Complete the table by writing either the roster form or set description.

Roster	Set Description
{0, 5, 10, 15, 20, . . .}	
{24, 26, 28, 30, . . .}	
	The set of all multiples of 17 from 17 to 51 inclusive.
{Mrs. Windsor , Mr. Wilmer, Mr. Woods}	
	The set of '09 St. Paul's School teachers that are under 10 years old.

II. Use set-builder notation to write each set.

Symbols :

D	**=**	**{**	*x*	|	Conditions(s)	}
Set D	is	the set of	all elements *x*	such that	*x* must meet the condition(s) in order to be a member of the set	

Example: E = {11, 12, 13, 14, 15 . . . } E = {*x* |*x* ∈ *N* and x is > 10} Which reads: "The set of all elements *x* such that *x* is a natural number and x is greater than 10."

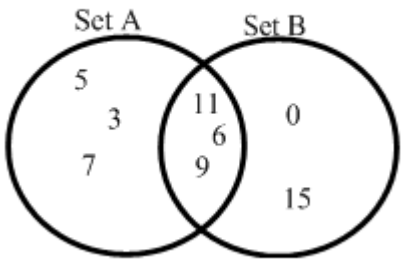
6) A set of natural numbers between 57 and 100} _____

7) A set if natural numbers greater than 1000 _____

8) A set of natural numbers less than 5 _____

. III. **Venn Diagrams:** Using the Venn diagram find the following answers

1. Use the roster form to write set A and B _____
2. A Π B = _____
3. A U B = _____
4. Does set A overlap B? _____
5. Are the sets disjoint?_____



Answers

Resources

Barron's Mathematics Study Dictionary ISBN #0-7641-0303-2

http://www.mathopenref.com/

http://aaamath.com/

http://www.coolmath.com/

www.mathforum.com.

www.fleetkids.com.

www.funbrain.com/numbers.html.

Answer Sheet - Please Remove

Lesson One

Part 1

1) $0.039 \leq 0.390$ **2)** $4.96 \leq 5.02$ **3)** $0.01 \geq 0.008$ **4)** $1.6849 \leq 1.685$ **5)** $4.707 \leq 4.770$

Part 2

6) 18.067 **7)** 6.4968 **8)** 8.98 **9)** 1.275 **10)** 154.786

Part 3

11) 44.94 **12)** 33.66 **13)** 3.8 **14)** 5.4 **15)** 0.3726

Part 4

16) $\frac{5}{8}$ **17)** $\frac{1}{5}$ **18)** $\frac{13}{20}$ **19)** $\frac{11}{16}$ **20)** $\frac{3}{8}$

Part 5

21) 0.125 **22)** $.\overline{6}$ **23)** 0.05 **24)** 0.1875 **25)** 0.75

Lesson Two- Order of Operations and Exponents

Part 1

1) 19 **2)** 6 **3)** 12 **4)** 42 **5)** 38

Part 2

6) 6^3 **7)** m^5

Part 3

8) 81 **9)** 9 **10)** 125 **11)** 64 **12)** 32

Part 4

13) 14 **14)** 24 **15)** 6 **16)** 125 **17)** 2 **18)** 5

Lesson Three- Solving Equations

Part 1

1) 0 **2)** 16 **3)** 34 **4)** -8 **5)** -23 **6)** 11

Part 2

7) 4 **8)** 8 **9)** 100 **10)** 40 **11)** 64 **12)** 7.5

Lesson Four- Distributive Property

Part 1

1) $4x + 36$ **2)** $16z + 48$ **3)** $ab + 4a$ **4)** $rs + rt$ **5)** $12s + 12t + 12w$

Part 2

6) $4r + 2s$ **7)** $16w + 12z$ **8)** $5a + 5b$

9) $5x + 3y - 3$ **10)** $-3x - 9y$ **11)** $4r + s$

12) $2xy + x^2$ **13)** $6xy + 2x^2$ **14)** $15p + 9q + 12$

Part 3

15) $2x + 2$ **16)** $12d$ **17)** $2a + 8b - 14$

18) $-5.6x + 4.4y + 4.4z$ **19)** $1.7y - 6.7$ **20)** $8c - 14$

Lesson Five- Integers

Part 1

1) > **2)** > **3)** > **4)** > **5)** > **6)** > **7)** < **8)** = **9)** < **10)** <

Part 2

11) 6 **12)** -22 **13)** 31 **14)** -5 **15)** -19

16) -31 **17)** -6 **18)** 9 **19)** -2 **20)** -1

Part 3

21) 21 **22)** -15 **23)** 38 **24)** -7 **25)** 65

26) -8 **27)** -2 **28)** 72 **29)** -28 **30)** 2

Part 4

1) -27 **2)** 120 **3)** -117 **4)** -140 **5)** -88

6) -60 **7)** 36 **8)** 180 **9)** -180 **10)** 98

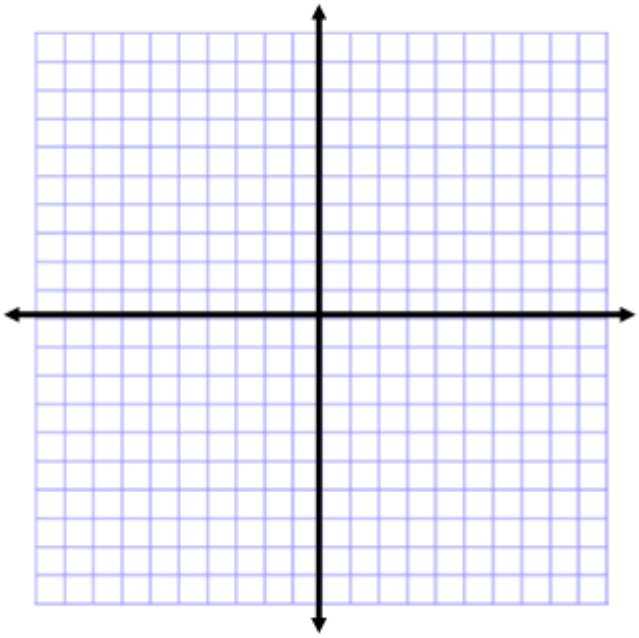
Part 5

11) -4 **12)** 7 **13)** 17 **14)** -7 **15)** -29

16) 2 **17)** -14 **18)** 40 **19)** -6 **20)** -5

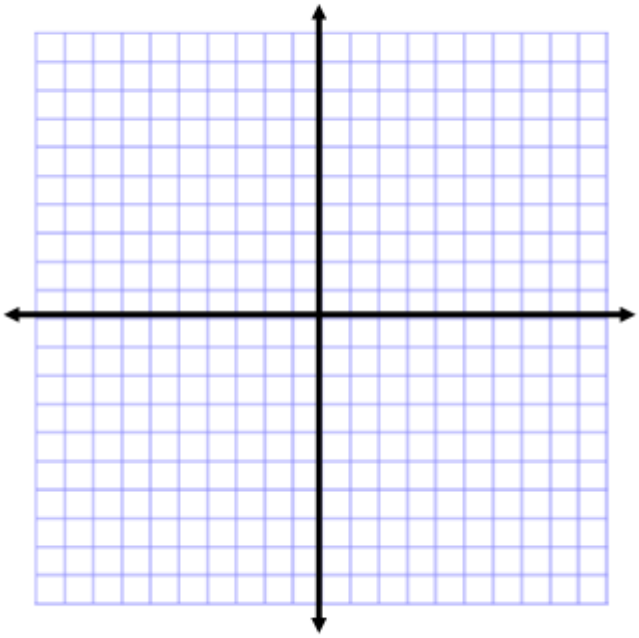
Lesson Six- Coordinate Planes

Part 1



Part 2

x	**-3**	**-2**	**-1**	**0**	**1**	**2**
y	**-1**	**0**	**1**	**2**	**3**	**4**
(x,y)	**(-3,-1)**	**(-2,0)**	**(-1,1)**	**(0,2)**	**(1,3)**	**(2,4)**



Lesson Seven- Single step and Multi-step Equations

Part 1

1) $y = 2$ **2)** $p = 2$ **3)** $h = 18$ **4)** $c = 4.5$ **5)** $a = -5$

6) $z = 48.8$ **7)** $x = -20$ **8)** $x = -12$ **9)** $m = -14$

Part 2

10) $a = 3$ **11)** $s = 7$ **12)** $m = -\frac{37}{2}$ **13)** $x = -1$

14) $x = -1$ **15)** $p = -8$

Lesson Eight- Prime Factorization, LCM and GCF

Part 1

1)

-585

/ \

3 195

/ / \

3 3 65

/ / / \

3 3 5 13

$-1 \cdot 3 \cdot 3 \cdot 5 \cdot 13$

2)

$54w^3z^4$

/ \

2 27

/ / \

2 3 9

/ / / \

2 3 3 3

$2 \cdot 3 \cdot 3 \cdot 3 \cdot w \cdot w \cdot w \cdot z \cdot z \cdot z \cdot z$

Part 2

3) 28 **4)** 1 or relatively prime **5)** 24 **6)** $2xy$ **7)** $3y$ **8)** $5xy^2$

Part 3

9) 42 **10)** 40 **11)** 225 **12)** $120st$ **13)** $36y^4$

14) $49s^3t^2$

Part 4

15) $\frac{4}{9}$ **16)** $\frac{12}{35}$ **17)** $\frac{-3xy}{4}$ **18)** $\frac{5}{xy^2}$

Lesson Nine- Evaluate the exponents and simplify

Part 1

1) -625 **2)** 625 **3)** 36 **4)** -36 **5)** 3

6) 1 **7)** y **8)** $\frac{1}{x^3}$ **9)** $\frac{1}{27}$ **10)** $\frac{1}{-27}$

11) -16 **12)** $\frac{3}{x^7}$ **13)** $\frac{2}{s^5}$ **14)** $\frac{-6}{m}$ **15)** $\frac{1}{-32}$

Part 2

16) x^8 **17)** z^{12} **18)** 81 **19)** 32 **20)** $\frac{1}{125}$

21) 1 **22)** $\frac{1}{z^3}$ **23)** $\frac{1}{n^{10}}$ **24)** $\frac{1}{512}$ **25)** $\frac{1}{27}$

Part 3

26) 125 **27)** z^5 **28)** d^7 **29)** a^3 **30)** 64

31) -343 **32)** $\frac{1}{x^5}$ **33)** $\frac{1}{s^2}$ **34)** $\frac{1}{16}$ **35)** $\frac{1}{25}$

Lesson Ten- Fractions

Part 1

1) $\frac{13}{15}$ **2)** $\frac{23}{35}$ **3)** $\frac{1}{10}$ **4)** $\frac{5}{8}$ **5)** $\frac{9}{6} or 1\frac{1}{2}$

6) $\frac{-19y}{60}$ **7)** $\frac{-3x}{14}$ **8)** $\frac{17s}{20}$ **9)** $\frac{36+x}{9x}$ **10)** $\frac{-13}{50n}$

Part 2

11) $8\frac{1}{9}$ **12)** $8\frac{7}{12}$ **13)** $1\frac{4}{5}$ **14)** $4\frac{3}{4}$ **15)** 7

16) $7\frac{19}{24}$ **17)** $1\frac{3}{8}$ **18)** $4\frac{13}{16}$ **19)** $3\frac{2}{3}$ **20)** $2\frac{1}{4}$

Part 3

1) $\frac{3}{7}$ **2)** $\frac{1}{6}$ **3)** $\frac{5}{8}$ **4)** $\frac{15}{28}$ **5)** $\frac{4n}{5}$

6) $10x$ **7)** $\frac{13t}{40}$ **8)** $\frac{5}{6}$ **9)** $\frac{-2}{3}$ **10)** $\frac{a}{3}$

Part 4

11) $\frac{14}{3}$ **12)** $\frac{99}{8}$ **13)** $\frac{37}{63}$ **14)** $\frac{56}{39}$ **15)** 22

16) $\frac{88}{7}$ **17)** $\frac{3}{4}$ **18)** $\frac{3}{2}$ **19)** $\frac{8}{15}$ **20)** 12

Lesson Eleven- Ratios and Proportions

Part 1

1) yes $\frac{3}{4}$ **2)** no **3)** yes $\frac{1}{5}$ **4)** no **5)** yes $\frac{3}{2}$

Part 2

6) $\frac{4}{5}$ **7)** $\frac{2}{3}$ **8)** $\frac{1}{9}$ **9)** $\frac{3}{2}$ **10)** $\frac{8}{1}$

Part 3

11) $\frac{28mi.}{1gal.}$ **12)** $\frac{72beats}{1\min.}$ **13)** $\frac{3.5in.}{1hr.}$

14) $.21 per ounce **15)** 3 cents per sheet

Part 4

16) false **17)** false **18)** true **19)** false **20)** true

Part 5

1) $m = 1$ **2)** $b = 1$ **3)** $d = 2$ **4)** $z = 12$ **5)** $x = 72$

Part 6

6) $\frac{n}{9} = \frac{10}{18}; n = 5$ **7)** $\frac{35}{25} = \frac{z}{5}; z = 7$ **8)** $\frac{p}{21} = \frac{11}{33}; p = 7$

9) $\frac{28}{w} = \frac{36}{9}; w = 7$ **10)** $\frac{4}{x} = \frac{6}{24}; x = 16$

Part 7

11) $\frac{4\,ft}{6in.} = \frac{20\,ft}{x}; x = 30in.$

12) $\frac{11}{50}\,\frac{x}{54\,ft} = \frac{5}{1.5}; x = 180\,ft.$

Lesson Twelve- More Equations

1) $a = -2$ **2)** $x = 5$ **3)** $u = 3.15$ **4)** $z = -4$ **5)** $y = 5$ **6)** $a = 2$

7) $y = 0.13$ **8)** $p = 2.1$ **9)** $z = -4$ **10)** $x = \frac{9}{4}$ **11)** $n = 4$ **12)** $r = \frac{7}{2}$

Lesson 13- Triangles

I. Triangles

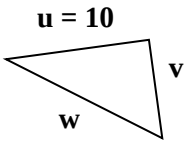
For questions 1-3 find the length of the missing leg of the right triangle where c is the hypotenuse.

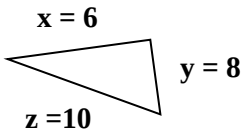
1. a = 6 b =8 c = 10

2. a= 5 b = 12 c= 13

3. a = 9 b = 15 c= 17.49

Use the similar triangles-they have the same angles.

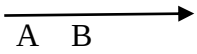




4. **Find the ratio of u to x 10:6 or 10/6**
5. **solve for v 13.33**
6. **solve for w 16.66**
7. **What is the perimeter of triangle UVW approximately 40**
8. **What is the area of Triangle UVW approximately 66.65**
9. **A chimney sweep must place a 52-foot ladder against the wall of a home so that it reaches a point exactly 48 feet high. How far from the home should he place the ladder? 20 feet**

II. Geometry Basics …..Resources: http://www.mathopenref.com/linesegment.html

Draw each figure and label.

Example: Draw a ray  A B

5. Line 

C D

6. Point **.A**

7. Line segment

C D

8. Plane A

III. Use a protractor to draw angles for exercises 1-5

6. Draw a 45° angle

7. Draw a 135° angle

8. Draw a 45° angle

9. Draw a 90° angle

10. Draw a 5° angle

Lesson 14- Sets

Complete the table by writing either the roster form or set description.

Roster	Set Description
{0, 5, 10, 15, 20, . . .}	**The set of all multiples of 5 from 0**
{24, 26, 28, 30, . . .}	**The set of all even numbers from 23**
{17,34,51}	**The set of all multiples of 17 from 17 to 51 inclusive.**
{Mrs. Windsor , Mr. Wilmer, Mr. Woods}	**The set of teachers whose last name begins with W**
{ } or Ø or null set	**The set of '09 St. Paul's School teachers that are under 10 years old.**

II. Use set-builder notation to write each set.

Symbols :

D	**=**	**{**	*x*	|	Conditions(s)	}
Set D	is	the set of	all elements *x*	such that	*x* must meet in order to be a member of the set	the condition(s)

Example: E = {11, 12, 13, 14, 15 . . . } E = {*x* |*x* Є *N* and x is > 10} Which reads: "The set of all elements *x* such that *x* is a natural number and x is greater than 10."

6) A set of natural numbers between 57 and 100} E={x| x Є N and 57<x<100}

7) A set if natural numbers greater than 1000 E={x| x Є N and x>100}

8) A set of natural numbers less than 5 E={x| x Є N and x<5}

. III. **Venn Diagrams:** Using the Venn diagram find the following answers

6. Use the roster form to write set A and B A={3,5,6,7,9,11}

7. A Π B = {6,9,11}

8. A U B = {0,3,5,6,7,9,11,15}

9. Does set A overlap B? yes

10. Are the sets disjoint? No