Summer greetings everyone!

I am looking forward to teaching your student in 8th grade this August. As I tell the children, you are always learning and using math- you don't finish a unit over fractions and never use them again. This is why a summer math packet is a good way to continually review skills and be ready for the new school year. Here are some things I am requiring with the packet this summer:

*Names need to be written on each worksheet

* All work needs to be shown on loose leaf paper with full heading and shown the way I require in class (a few pages require no work shown-those worksheets have a star on them)

*All loose leaf and worksheets need to be placed in a two-pocket folder and first and last name on the folder

*Folders need to be brought to my room school supply drop off night

*Lastly, the work is meant to be spread out over the summer that way the students are always reviewing.

Have a fabulous summer!

Dorothy Starnes

6th, 7th, and 8th Grade Math

Name: _____

Add or Subtract

$9 + (-4) =$	$5 - 2 =$
$7 + (-9) =$	$-4 - 6 =$
$-3 + 8 =$	$8 - (-2) =$
$-4 + 7 =$	$-12 - 3 =$
$-16 + 0 =$	$4 - 19 =$
$0 + (-8) =$	$-1 + 2 =$
$1 + (-3) =$	$7 + (-7) =$

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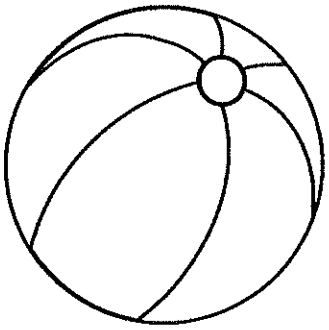
Name: _____

Evaluate each expression.

$a = 2$, $x = -3$ and $y = -2$



$x\,(ax + ay) =$ _____

$ay + y - 5x =$ _____

$4x - (xy + 2) =$ _____

$5x\,(8a + -4y) + -3y =$ _____

$3xy - 2x\,(4a - 8y) =$ _____

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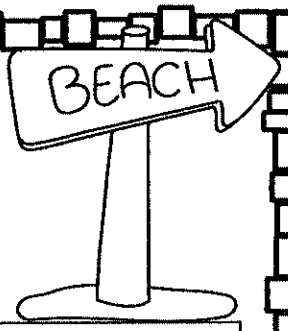
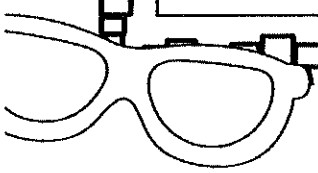
Name: _____

Simplifying Expressions



3 (2a - 8b)	
2x (3y + - 6)	
7 (-5x + 8z)	
-5y (6z - 10)	
-2x (-7 + 8y)	
y (-13) + 2x	



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Name: _____

Put a star by the proportions that are true.

$\frac{8}{9} = \frac{72}{81}$

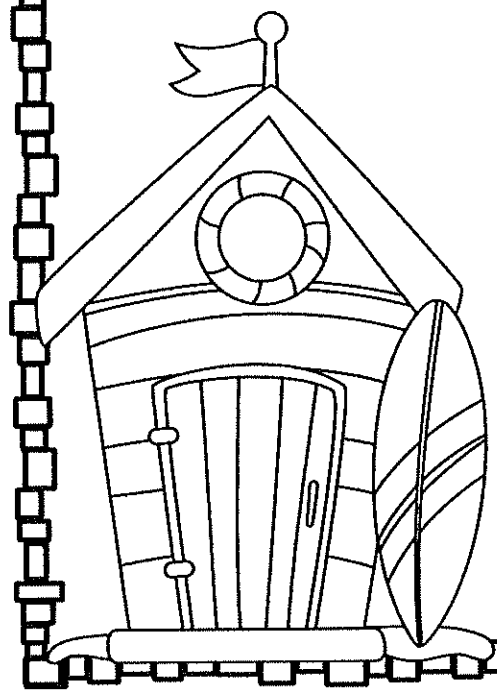
$\frac{11}{20} = \frac{20}{24}$

$\frac{4}{5} = \frac{12}{20}$

$\frac{8}{3} = \frac{24}{9}$

$\frac{1}{3} = \frac{4}{9}$

$\frac{15}{25} = \frac{3}{5}$



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Name: _____

Unit Rate Problems

A fruit box subscription is $105 for one year. What is the price per month?

A box of granola bars is $3.44. The box has 8 bars. How much does each granola bar cost?

Our class is going on a field trip. Our class had to pay $243.60 for all 28 of us to go. What is the cost per student?

We bought a pack of drinks for $8.28. There were 12 in the box. What is the cost per drink?

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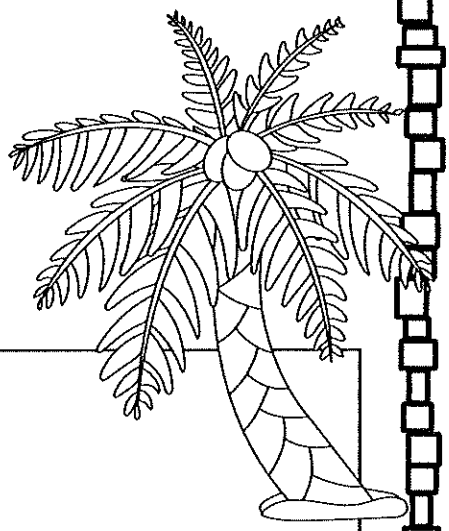
Name: _____

Unit Rate Problems



Directions: Solve each problem.

We are buying apples for the school picnic. Five of the boxes weighed 150 pounds total. How many did 7 boxes weigh?	
A candy store sells 50 pieces of gum for every 40 pieces of taffy. The store sold 250 pieces of gum yesterday. How many pieces of taffy did they sell?	
On a map of our city, each inch represents 10 miles. What is the length of a road that is 4 inches long on the map?	
There are 32 granola bars in 4 boxes of granola bars. How many granola bars are there in 7 boxes?	

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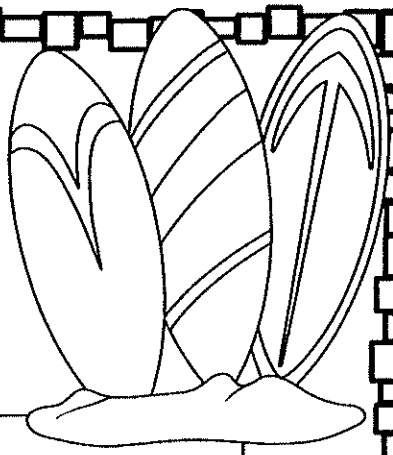
Name: _____

Finding Percentages



Directions: Write the equivalent fraction for each percent.

25%	
16%	
36%	
44%	
62%	
13%	
90%	
52%	

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Name _____ Date _____

Variables and Equations

Substitution

Substitute and simplify. $x = 2, y = 4, z = -3$

1. $2z + 4xy =$

2. $(2x + y + 3z)^2 =$

3. $10xyz \div 5 =$

4. $5x + 2z =$

5. $(y + z)^3 =$

6. $2(6 + z) =$

7. $3(x + y)^2 =$

8. $2x + y + z =$

9. $(x - z) + y =$

10. $6y + 2xz =$

Substitute and simplify. $w = -5, x = 4, y = 2, z = -8$

11. $2wz - 3xy =$

12. $2y(z + x) =$

13. $wx + yz =$

14. $w^2 - x^2 =$

15. $5(w + x) + 3(7 + z) =$

16. $w + (x + 2y + z)^2 =$

17. $(z - w)^3 =$

18. $(w + x + y)^3 =$

19. $(2xy) - 2wz =$

20. $3w + 2z - xy + z^3 =$

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Name _____ Date _____

Variables and Equations

Combining Like Terms

$4x + 5y + (^{-}18x) = {}^{-}14x + 5y$

Combine like terms.

1. $3yz + 5yz =$

2. $3a + 5 + a =$

3. $5x - 5y - 8y + 8x =$

4. $18x + 3x =$

5. $5 - (^{-}4k) =$

6. $7c - 12c =$

7. $13ab + (^{-}12ab) =$

8. $^{-}12x + (^{-}4x) =$

9. $^{-}10n - (^{-}13n) =$

10. $12b + (^{-}34b) =$

11. $4.7x - 5.9x =$

12. $4x^2 + (^{-}8y) + (^{-}3xy) + 5x^2 + 2xy =$

13. $4x + 3y + (^{-}5y) + 3xy + y =$

14. $2x - y + 2x + 3xy =$

15. $5x + 7x =$

16. $23x + 8 + 6x + 3y =$

17. $^{-}e + 8e =$

18. $2xy + 5x + 6xy + 3xy + (^{-}3x) =$

19. $7s + 5x - 8s =$

20. $4xy + 7xy + 6x^2y + 3xy^2 =$

Name _____ Date _____

Variables and Equations

Problem Solving

The sum of three times a number and 25 is 40. Find the number.

$3x + 25 = 40$

$3x + 25 - 25 = 40 - 25$

$3x = 15$

$x = 5$ The number is 5.

Write an equation for each word problem and solve it.

1. The difference of a number and $^{-}3$ is 8. Find the number.

Equation _____ **Solution** _____

2. Twice a number added to 9 is 15. Find the number.

Equation _____ **Solution** _____

3. Twelve subtracted from 3 times a number is 15. Find the number.

Equation _____ **Solution** _____

4. The sum of 4 times a number and 5 is $^{-}7$. Find the number.

Equation _____ **Solution** _____

5. The product of a number and 5 is 60. Find the number.

Equation _____ **Solution** _____

6. The difference of 5 times a number and 6 is 14. Find the number.

Equation _____ **Solution** _____

7. The sum of a number and $^{-}6$ is 10. Find the number.

Equation _____ **Solution** _____

8. The quotient of a number and 4 is $^{-}12$. Find the number.

Equation _____ **Solution** _____

 NAME _____

Who referees sporting events in Vatican City?

DIRECTIONS: Solve each problem and then find your answer in the decoder. Each time your answer occurs, write the letter of the problem above it.

1. $-2 + (-7) =$ _____(o)
2. $-13(10) =$ _____(t)
3. $15 - 20 =$ _____(a)
4. $-15 + 30 + 20 + (-11) =$ _____(n)
5. $-5(-8)(3) =$ _____(e)
6. $-2 + (-8) + 6 =$ _____(m)
7. $-17(-8) =$ _____(l)
8. $-12 \div (-6) =$ _____(i)
9. $61 + (-33) + (-20) =$ _____(r)
10. $-10 - (-2) =$ _____(h)
11. $-36 \div 6 =$ _____(p)
12. $18(-9) =$ _____(y)
13. $-48 \div (-6) + 12 =$ _____(u)

_____	_____	_____	_____	_____	_____	_____
-130	-8	120	-8	-9	136	-162

_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
8	-9	-4	-5	24	20	-4	-6	2	8	120

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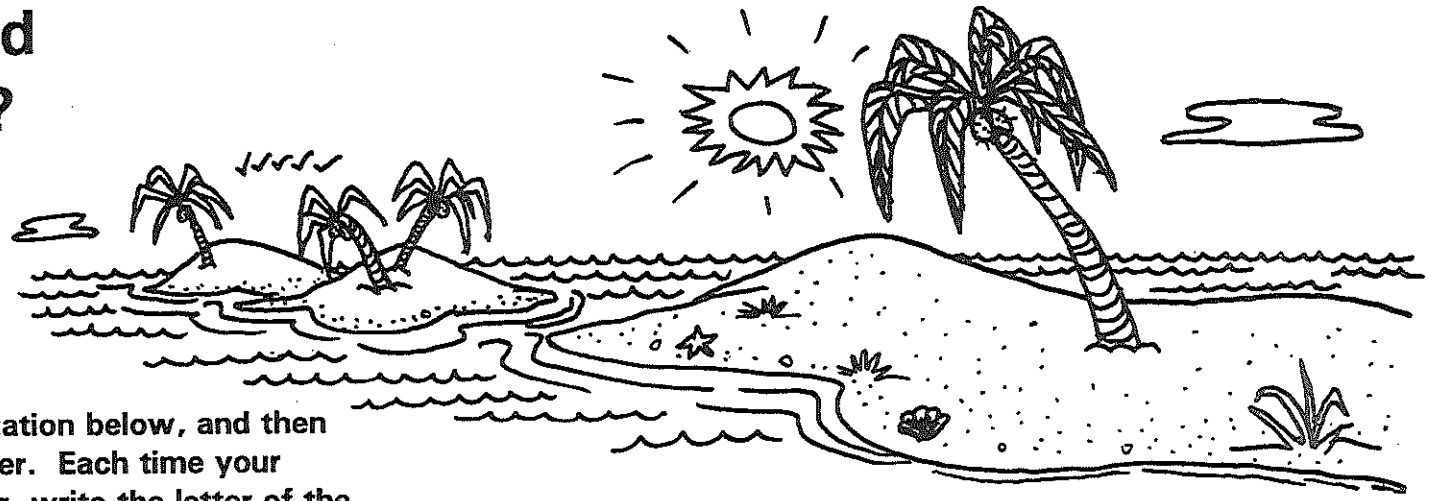
Why is an island like the letter t?



DIRECTIONS: Solve each equation below, and then find your answer in the decoder. Each time your answer appears in the decoder, write the letter of the problem above it.

1. $f + (-7) = 16$ (f= _____)
2. $t + (-11) = -22$ (t= _____)
3. $o + (-8) = 7$ (o= _____)
4. $43 + a = -16$ (a= _____)
7. $i + (-21) = -58$ (i= _____)
8. $r + (-18) = 25$ (r= _____)
9. $44 = d + 64$ (d= _____)
10. $e + (-3) = 18$ (e= _____)
11. $15 = h + 42$ (h= _____)
12. $n + 14 = -32$ (n= _____)
13. $-12 + l = -38$ (l= _____)
14. $18 + m = -57$ (m= _____)

5. The best deal Scott could find on a new truck was $8,950. This price also included a $659 option package. What was the price of the car without the option package? Price = w (w= _____)

6. You recently purchased a CD player and a set of speakers for $875. If the speakers were $257, how much did you pay for the CD player? CD player = b (b= _____)

$618	15	-11	-27	-59	43	21	-37	-46	-11	-27	21	
-75	-37	-20	-20	-26	21	15	23	$8,291	-59	-11	21	43

Solving equations: x - b = c

NAME _____ 13

Where did Abraham Lincoln live?

DIRECTIONS: Solve each equation. Then find your answer in the decoder. Each time your answer occurs in the decoder write the letter of the problem above it.

1. b - 16 = 32 b= _____
2. h + (-13) = 6 h= _____
3. v - (-17) = 13 v= _____
4. 43 = y - (-48) y= _____
5. t + (-8) = -31 t= _____
6. s - (-49) = -36 s= _____
7. d - 27 = -64 d= _____
8. i + (-8) = 26 i= _____
9. -18 = a - 76 a= _____
10. e + (-14) = 21 e= _____

11. Ryan had $145.00 when he started shopping for school clothes. After purchasing a shirt, a pair of jeans, and a sweater he had $32.00 left. How much did he spend? _____ = u

12. Katie made a deposit of $125.00 for a summer softball camp. She still has $250.00 to pay. How much was the total fee for Katie's softball camp? _____ = r

13. Phillip is representing his school in a quiz bowl. After answering a 150-point question correctly, his score is -200. What was his score before he answered the question? _____ = g

34	19	58	-4	35	19	34	-85	-350	35	-23	-23	-5	-85	48	$113	$375	-350

58	-37	-37	$375	35	-85	-85	$375	34	-350	19	-23	19	35	$375	35

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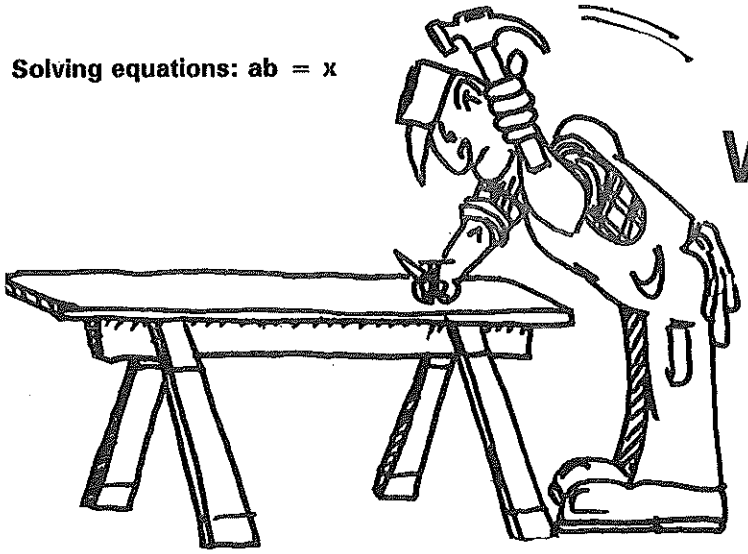
NAME _____



What is the favorite dessert of boxers and carpenters?

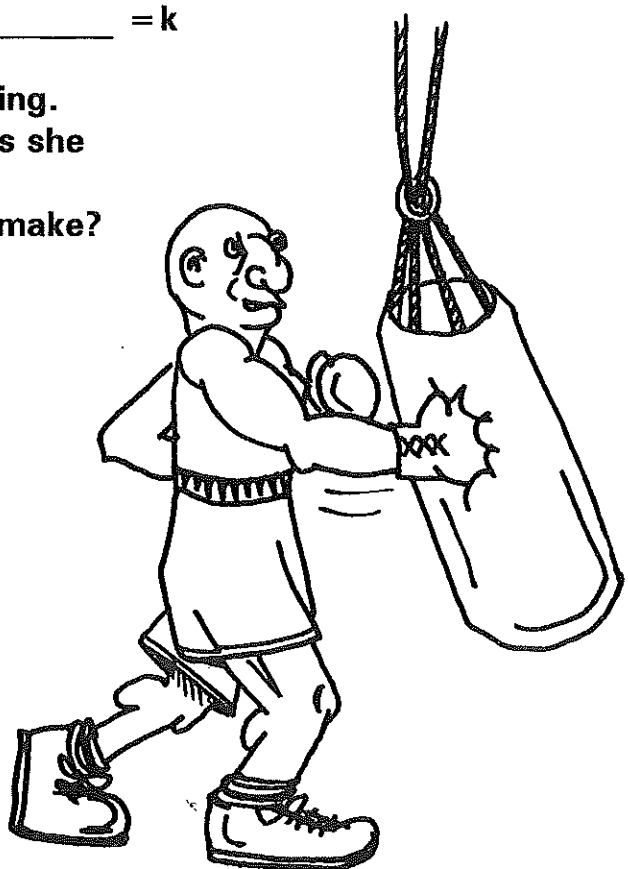
DIRECTIONS: Solve each equation below. Then find your answer in the decoder. Each time your answer occurs in the decoder, write the letter of the problem above it.

1. $-8h = 64$ $h =$ _____
2. $-3n = -36$ $n =$ _____
3. $165 = -11t$ $t =$ _____
4. $4a = -64$ $a =$ _____
5. $-7u = 91$ $u =$ _____
6. $-14e = -182$ $e =$ _____
7. $17d = 136$ $d =$ _____
8. $-60 = -15o$ $o =$ _____
9. $-14c = -98$ $c =$ _____
10. If Jon weighs four times as much as his baby brother, and his brother weighs 21 pounds, how much does Jon weigh? _____ = k
11. Morgan makes $15.00 per week babysitting. Her older sister makes 5 times as much as she does working as a cashier at the local supermarket. How much does her sister make? _____ = p

_____	_____	_____
-15	-8	13

_____	_____	_____	_____	_____
$75	4	-13	12	8

_____	_____	_____	_____
7	-16	84	13



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NAME_____ 15

What is the first part of a geography book called?

DIRECTIONS: Find your answer in the decoder. Each time it occurs in the decoder, write the letter of the problem above it.

1. $21 = \frac{f}{-7}$ (f= _____)
2. $\frac{a}{13} = -15$ (a= _____)
3. $\frac{n}{8} = -32$ (n= _____)
4. $\frac{l}{-46} = 216$ (l= _____)
5. $\frac{o}{-34} = -14$ (o = _____)
6. $-6 = \frac{s}{-8}$ (s= _____)
7. $5 = \frac{i}{18}$ (i= _____)
8. $-24 = \frac{b}{32}$ (b= _____)
9. $-4 = \frac{e}{-5}$ (e= _____)
10. Timothy is training for a marathon. He runs an average of 21 miles per week. Since he has been training, he has run 84 miles. For how many weeks has he been training? (c= _____)
11. For four consecutive hours the temperature dropped 3°F for each hour. What was the total temperature change? (t= _____)

___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___
-12	-195	-768	-9936	20	476	-147	4	476	-256	-12	90	-256	20	-256	-12	48	

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NAME_____

Why do mummies never tell secrets?

DIRECTIONS: Solve each equation. Find your answer in the decoder. Each time your answer occurs in the decoder write the letter of the problem above it.

Multiply these fractions:

1. $\frac{1}{7} \cdot \frac{1}{7} =$ _____ (u)

2. $-3\frac{1}{3} \cdot 1\frac{3}{5} =$ _____(h)

3. $(1\frac{1}{9})(\frac{17}{30}) =$ _____(g)

4. $3(\frac{3}{5})^2 =$ _____(s)

5. $(\frac{1}{2})^2 =$ _____(o)

6. A peregrine falcon flies at speeds up to 225 mph. A golden eagle flies about two-thirds as fast. How fast does the golden eagle fly? _____(r)

Name the multiplication inverse of each rational number:

7. $\frac{1}{3} =$ _____(k)

8. $-\frac{4}{3} =$ _____(a)

9. $3\frac{1}{5} =$ _____(n)

10. $1.5 =$ _____(y)

11. $\frac{x}{z} =$ _____(l)

12. $2\frac{1}{4} =$ _____(i)

Divide these fractions:

13. $-10 \div \frac{3}{2} =$ _____(p)

14. How many boards each 2 ft 4 in. long can be cut from a board 12 ft long? = _____(e)

15. $4 \div \frac{1}{2} =$ _____(d)

16. $\frac{5}{8} \div (-2) =$ _____(t)

17. Lindsay had 6¼ cups of flour on hand to use for cakes she wants to make for the school sale. If the recipe calls for 1½ cups of flour, how many cakes can she make? _____(w)

$-\frac{5}{16}$	$-5\frac{1}{3}$	5	$\frac{2}{3}$	$\frac{z}{x}$	$\frac{4}{9}$	3	5	$-\frac{5}{16}$	$\frac{1}{4}$	3	5	5	$-6\frac{2}{3}$

$-\frac{5}{16}$	$-5\frac{1}{3}$	$\frac{4}{9}$	$\frac{5}{16}$	$\frac{17}{27}$	$12\frac{24}{25}$	$\frac{1}{49}$	$\frac{5}{16}$	8	5	150	4	150	$-\frac{3}{4}$	$-6\frac{2}{3}$	$12\frac{24}{25}$

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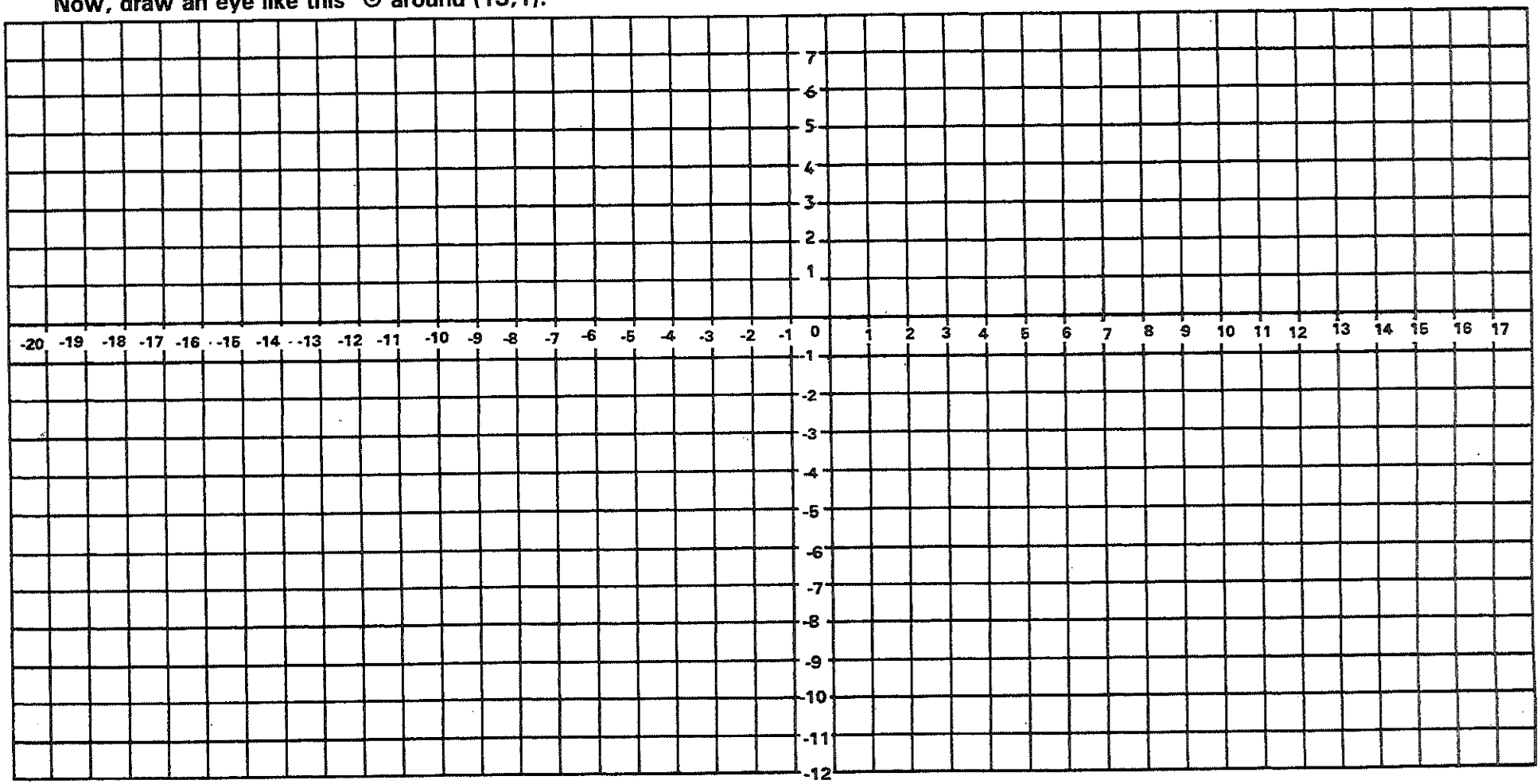
BACKGROUND INFORMATION: I can reach a weight of 200 pounds and a length of ten feet from my nose to the tip of my tail. I can leap along the ground at 30 miles an hour. My young is called a joey and it's only 1 inch long when born. It finds shelter in my pouch where my muscles pump milk down its throat. At four months old my joey can climb out of the pouch and nibble grass; however, if danger threatens , I will move at full speed, gather it up and tuck it into my pouch.

What am I? _____

DIRECTIONS: This graph has positive and negative coordinates. It is made up of 5 lines. The symbol [denotes the beginning of a line and the symbol] the end of a line. Graph the coordinates in the order given below.

[(8,1), (10,1), (11,2), (12,5), (12,2), (13,5), (13,2), (15,1), (16,0), (16,-1), (15,0), (15,-1), (14,-1), (12,0), (9,-2), (7,-3),] [(5,1), (6,2), (7,2), (8,1), (8,-1), (7,-3), (7,-4), (5,-3), (4,-5), (1,-5), (2,-4), (3,-4), (3,-3) (4,-1), (6,-2), (5,0)] [(0,-2), (2,-3), (3,-3)] [(0,2), (-1,3), (-2,3), (1,1), (1,0), (0,-2), (-2,-7), (-1,-9), (0,-10), (2,-11), (3,-12), (1,-12), (-4,-7), (-3,-3), (-7,-1), (-4,-4), (-5,-7), (0,-12), (1,-12)] [(6,2), (4,3), (0,6), (-2,6) (-4,5), (-7,3), (-10,1), (-14,-3), (-17,-4), (-20,-4), (-20,-5), (-17,-5), (-12,-4), (-8,-2), (-7,-1)].

Now, draw an eye like this ⊙ around (13,1).

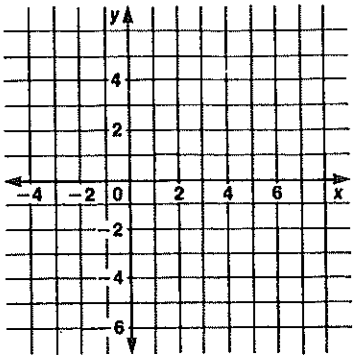


NAME_____

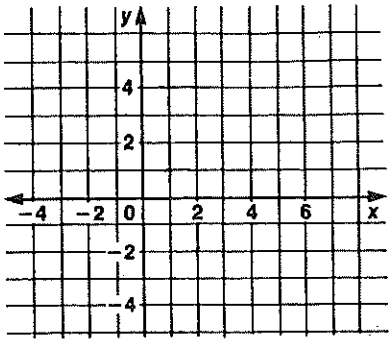
Graphing Equations

RECTIONS: Complete each table and then graph each solution.

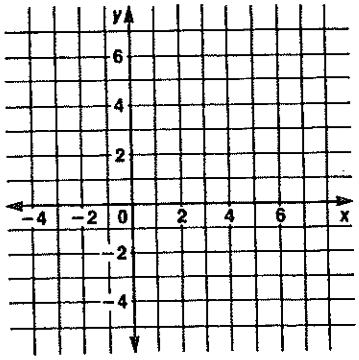
x	-2x + 4	y
1		
2		
3		
4		



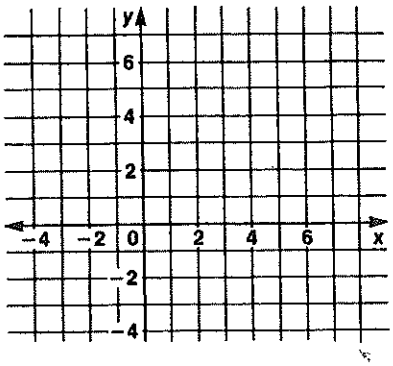
x	y = x + 1	y
-1		
0		
3		
5		



x	$\frac{2}{3}x + 2$	y
-3		
0		
3		
6		

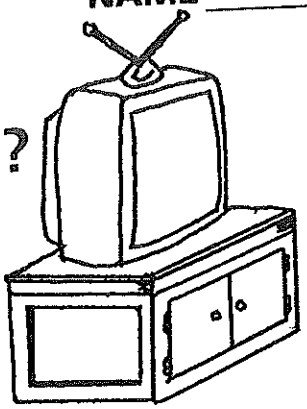


x	$\frac{1}{2}x - 1$	y
0		
1		
2		
3		



NAME _____

What are the fastest ways of sending news?



DIRECTIONS: Solve each problem. Find your answer in the decoder. Each time your answer occurs in the decoder write the letter of the problem above it.

Find the discount or interest to the nearest cent.

1. $1575 computer, 30% off Discount is _____ (d)
2. $195 skateboard, 40% off Discount is _____ (n)
3. $495 for a compact disc player, 20% off Discount is _____ (h)
4. $1,050 for a CD Rom, 25% off Discount is _____ (a)
5. $700 at 8% for 1 year Interest is _____ (e)
6. $40,000 at 12% for 15 years Interest is _____ (l)
7. $30,000 at 5% for 10 years Interest is _____ (v)
8. $1,270 at 18% for 2 years Interest is _____ (p)

Find the discount rate. Round to the nearest whole percent.

9. $15 compact disc on sale for $9 Discount rate is _____ (o)
10. $30 book bag on sale for $22 Discount rate is _____ (s)
11. $36 sweater on sale for $25 Discount rate is _____ (i)
12. $9 cassette tape on sale for $5.95 Discount rate is _____ (g)
13. $59.95 tennis shoes on sale for $39.95 Discount rate is _____ (t)

33%	56	72,000	56	457.20	99	40%	78	56

33%	56	72,000	56	15,000	31%	27%	31%	40%	78

262.50	78	472.50

33%	56	72,000	72,000	262.50

34%	40%	27%	27%	31%	457.20

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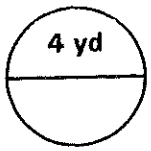
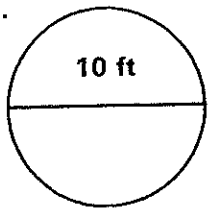
$A = \pi r^2$

Is there a word in the English language that contains all the vowels?

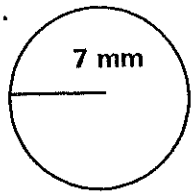
DIRECTIONS: Find the area of each circle shown. Round your answer to the nearest whole number. Then find your answer in the decoder. Each time your answer occurs in the decoder write the letter of the problem above it.

1. 

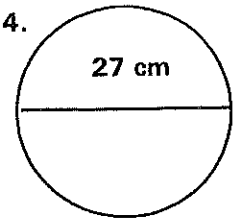
i = _____

2. 

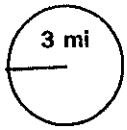
q = _____

3. 

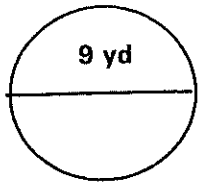
l = _____

4. 

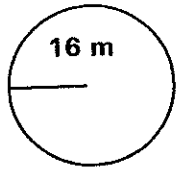
e = _____

5. 

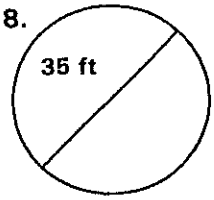
n = _____

6. 

u = _____

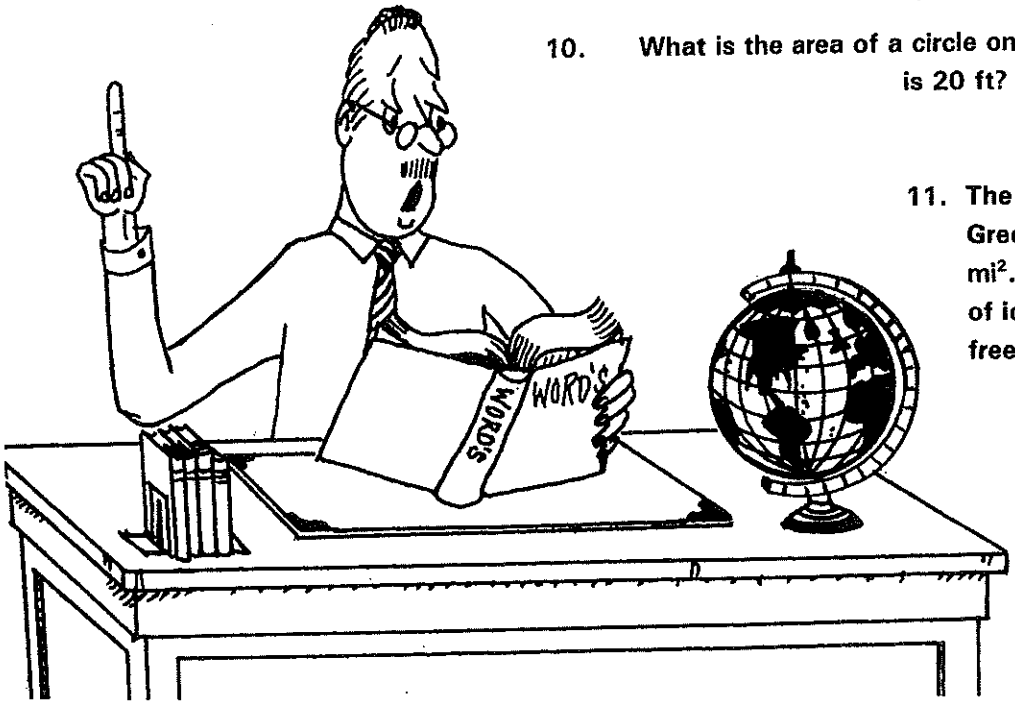
7. 

o = _____

8. 

y = _____

9. Jupiter, the largest planet in our solar system has a diameter of 88,000 miles. The diameter of the Earth is 7,926 miles. How much larger is Jupiter's diameter than the Earth? _____ = s



10. What is the area of a circle on a playground whose diameter is 20 ft? _____ = a

11. The largest island is Greenland with an area of 840,186 mi^2. However, only 16% of it is free of ice. How much of Greenland is free of ice? _____(t)

12. Mrs. Opie planned for her pond to be in the shape of a circle. She measured the diameter of the circle she had planned and found it to be 6 ft. What will be the area of her pond? _____ = b

64 yd^2	28 mi^2	79 ft^2	64 yd^2	572 cm^2	80,074 mi	134,430 mi^2	13 yd^2	804 m^2	28 mi^2	314 ft^2	28 ft^2	154 mm^2	962 ft^2

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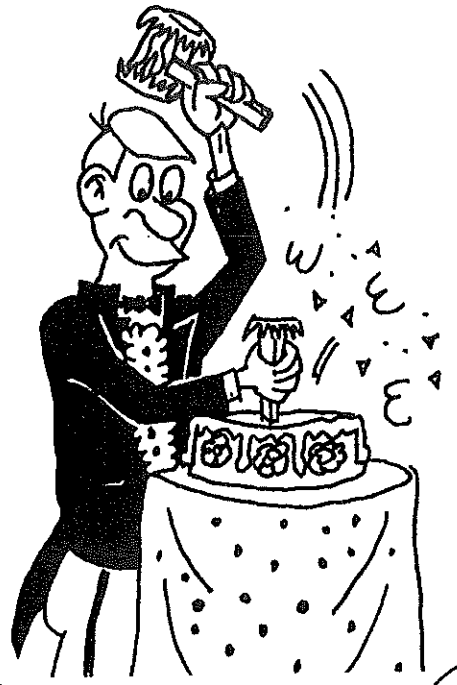
83 Finding the circumference of a circle

NAME _____

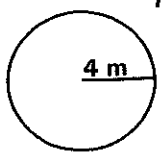
What did the groom do when his wife made him a marble cake?



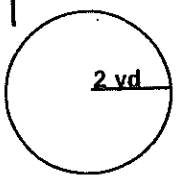
DIRECTIONS: Find the circumference of each circle described below. Then find your answer in the decoder. Each time your answer occurs in the decoder write the letter of the problem above it.

$C = \pi d$
$C = 3.14(d)$

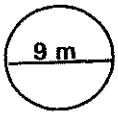
$C = 2\pi r$
$C = 2(3.14)(r)$

1. 

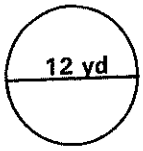
C = _____(f)

2. 

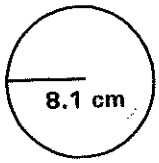
C = _____(h)

3. 

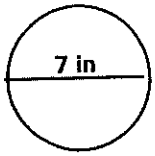
C = _____(o)

4. 

C = _____(i)

5. 

C = _____(t)

6. 

C = _____(k)

7. The radius is 5 miles. C = _____(e)

8. The diameter is 13.4 km. C = _____(a)

9. The radius is 3.75 yards. C = _____(r)

10. The diameter is 6.85 inches. C = _____(n)

11. The radius is 10.4 cm. C = _____(g)

12.56 yd	31.4 mi	50.868 cm	28.26 m	28.26 m	21.98 in	37.68 yd	50.868 cm		
25.12 m	28.26 m	23.55 mi	65.312 cm	23.55 yd	42.076 km	21.509 in	37.68 yd	50.868 cm	31.4 mi

NAME_____

Why does an empty wallet always stay empty?

DIRECTIONS: Find the percent of change in the problems below. Round to the nearest whole percent.

1. old: $325
   new: $375
   percent of change = _____(y)

2. old: $65.00
   new: $68.25
   percent of change = _____(r)

3. old: $75
   new: $85
   percent of change = _____(v)

7. old: $57.30
   new: $37.60
   percent of change = _____(e)

8. old: $150
   new: $135
   percent of change = _____(s)

9. old: $3.00
   new: $3.60
   percent of change = _____(t)

10. old: $16
    new: $28
    percent of change = _____(c)

11. $38 sweater increased to $48
    percent of increase = _____(h)

12. old: $2,200
    new: $1,600
    percent of change = _____(n)

4. Greg weighed 140 pounds. On his diet he lost 15 pounds. What was the percent of decrease in Greg's weight? _____(g)

5. You can warm up your spaghetti on a gas range in 10 minutes. You can warm up that same spaghetti in the microwave in 2 minutes. Find the percent of decrease in cooking time. _____(a)

6. A $12 cassette disc is increased to $18.00. What is the percent of increase?_____(i)

20%	26%	34%	5%	34%	50%	10%	27%	34%	13%	34%	5%

80%	27%	15%	75%	26%	80%	27%	11%	34%	50%	27%	50%	20%

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Name : _____

Two-Step Equations: Whole Numbers

Sheet 3

Solve each equation.

1) $\frac{t+28}{3} = 11$

2) $13d + 2 = 15d$

3) $35 - 4y = y$

4) $5 + 6r = 29$

5) $\frac{c}{2} - 3 = 1$

6) $\frac{u-6}{8} = 0$

7) $3s - 17 = 19$

8) $14 - 2p = 5p$

9) $\frac{20n+9}{n} = 21$

10) $26 = 22 + \frac{v}{7}$

Name : _____

Two-Step Equations: Integers

Sheet 6

Solve each equation.

1) $-15x - 9 = 36$

2) $-24 = 6(10 + z)$

3) $-4 = \frac{a - 1}{2}$

4) $-s + 11 = 17$

5) $\frac{h}{3} + 18 = 18$

6) $32 = 4(n - 5)$

7) $-8(g + 12) = 24$

8) $9b - 21 = 8b - 7$

9) $\frac{m}{4} - 8 = 12$

10) $-10 = \frac{y}{6} - 14$

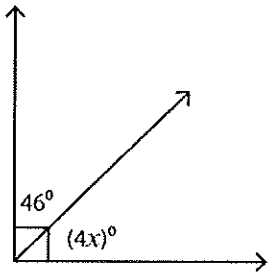
Name : _____

Complementary & Supplementary Angles

One-step: S1

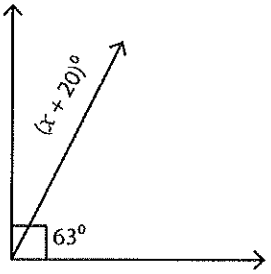
Find the value of x.

1)



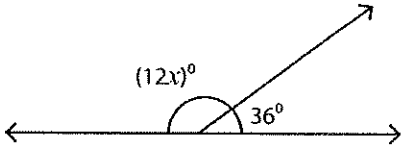
$x =$ _____

2)



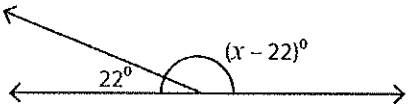
$x =$ _____

3)



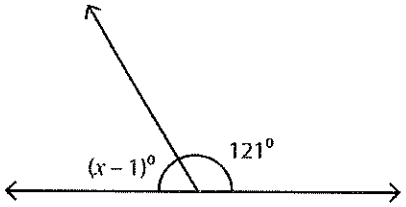
$x =$ _____

4)



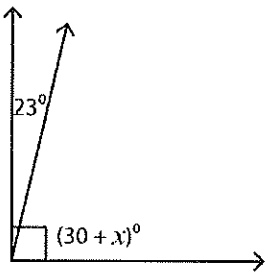
$x =$ _____

5)



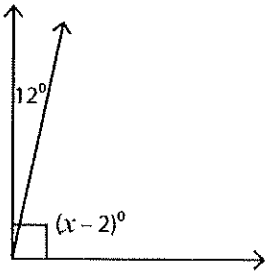
$x =$ _____

6)



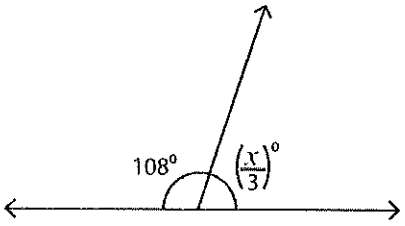
$x =$ _____

7)



$x =$ _____

8)



$x =$ _____

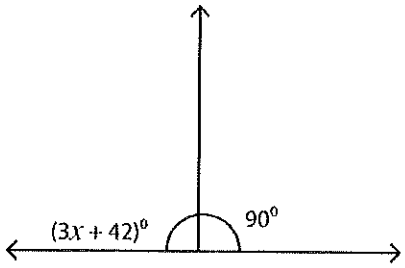
Name : _____

Complementary & Supplementary Angles

Two-step: S3

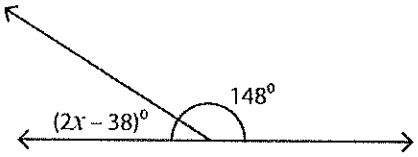
Find the value of x.

1)



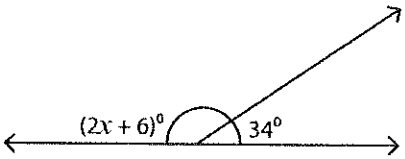
$x =$ _____

2)



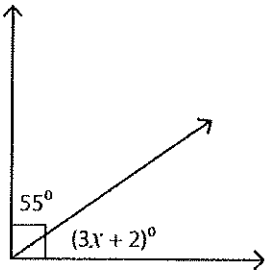
$x =$ _____

3)



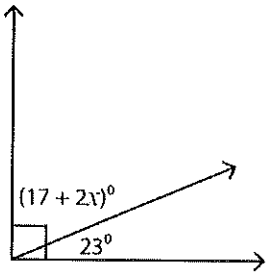
$x =$ _____

4)



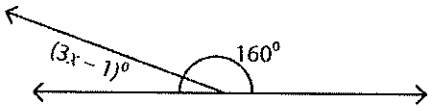
$x =$ _____

5)



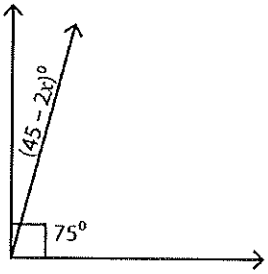
$x =$ _____

6)



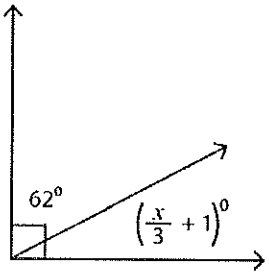
$x =$ _____

7)



$x =$ _____

8)



$x =$ _____