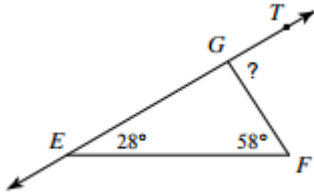Directions: Answer the following question(s).

1 Determine what value for the indicated variable makes the following statement true:
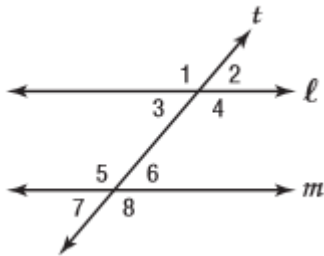
$$\frac{3}{2} + \frac{3}{5}x = \frac{9}{2} + \frac{4}{5}x$$

---

2 What is the measure of angle *TGF*?

A.　28 degrees

B.　58 degrees

C.　86 degrees

D.　94 degrees

3 Parallel lines *l* and *m* are intersected by transversal *t* below. Which of the following angles are **not** congruent?

A.　1 and 2

B.　2 and 3

C.　3 and 6

D.　4 and 8

4 Find the fraction equal to $0.\overline{534}$

5 The table shown below was posted on the wall at Andy's Hardware to show the price of varying lengths of chain-link fencing.

PRICE OF FENCING

Length (feet)	Price
75	$168.75
125	$281.25
175	$393.75
225	$506.25

The price of the same fencing at Bargain Hardware can be determined by the equation $y = 2.50x$, where y is the price, in dollars, for x feet of fencing.

Determine the unit price for fencing, in dollars per foot, for each store.

Show your work.

Answers:

Andy's Hardware $_____ per foot

Bargain Hardware $_____ per foot

6 A school district is planning on buying new desks for its classrooms. The number of desks in each secondary classroom (*y*) is to be 10 more than the number of desks in each elementary classroom (*x*). For the 30 elementary classrooms and 20 secondary classrooms in the district, a total of 1000 desks are needed.

The system of equations below represents this situation:

$$y = x + 10$$

$$30x + 20y = 1000$$

What is the solution to the system?

Directions: Answer the following question(s).

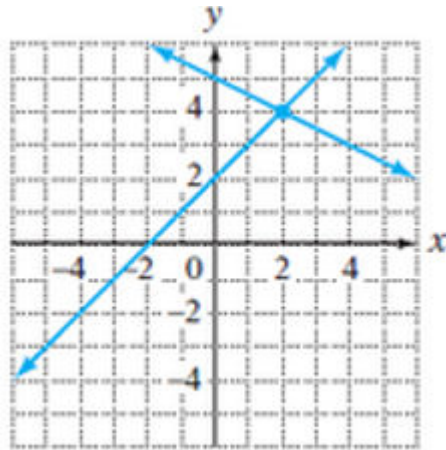7   Select the expression that is equivalent to $3^2x^2y^{-4} \cdot xy^5$

A. $9x^3y$

B. $6x^2y$

C. $6x^3y$

D. $\dfrac{9x^3}{y}$

8   Match the correct graph with the given system of linear equations.
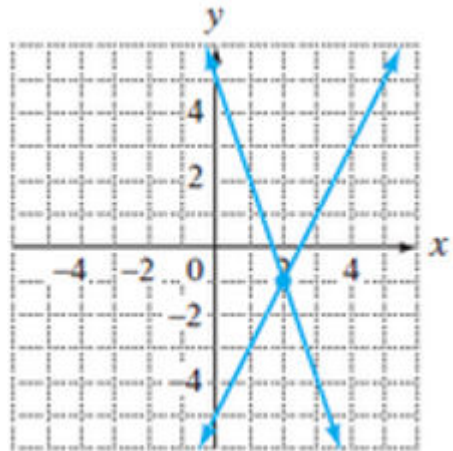
$$x + 2y = 10$$

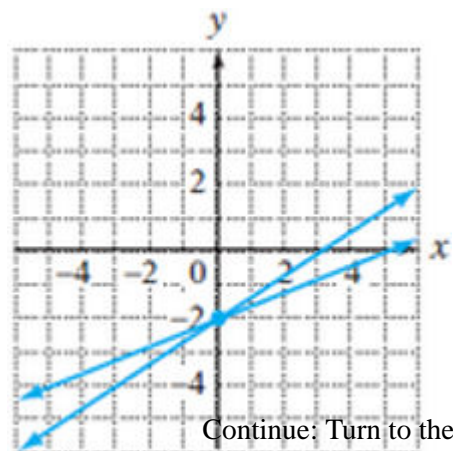$$y = x + 2$$

A.

B.

C.

D. y

Directions: Answer the following question(s).

9 Write the equation of the line in slope intercept form. That would have the slope of two and crosses through the ordered pair (-3,5).

[   ]

10 Graph the system to find the solution

$$y = 2x + 1$$

$$y = x + 3$$

A. (2 , 5)

B. (5, 2)

C. no solution

D. inifinitey many solutions
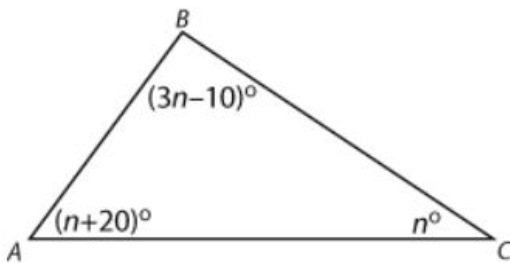
11 Solve the following equation.

$$3.5d + 9.75 = 1 + 5.25d$$

[   ]

12 Select all names that apply to the number

$$\sqrt{9}$$

A. irrational

B. integer

C. real

D. rational

E. whole

13 Solve for n.

[   ]

14 Which of the following is an equation with ONE solution?

A. 2x = 2x + 18

B. 2x - 10 = 2(x - 5)

C. 5(x + 3) + x

D. 2x + 5= 11 - 4x

15 Solve for a:

-3 + 8(1 - 2a) = 4(a- 4) +1

A. -13

B. 1

C. No Solution

D. -4

16 Which statement below is true?

A. Negative exponents call for repeated multiplication with negative numbers.

B. Negative exponents can't be used in Math, because it makes no sense to have a negative number of copies.

C. Negative exponents call for repeated division with the base term.

D. Negative exponents call for repeated subtraction with the base term.

Directions: Answer the following question(s).

17 *Guided Practice: Problem #7*

Which **expressions** are equivalent to $\left(\frac{5}{3}\right)^{-2}$?

Select **both** correct answers.

    a. $\frac{-10}{-6}$

    b. $\frac{25}{9}$

    c. $\frac{9}{25}$

    d. $\left(\frac{-5}{-3}\right)^2$

    e. $\left(\frac{3}{5}\right)^2$

A.   -10 / -6
B.   25 / 9
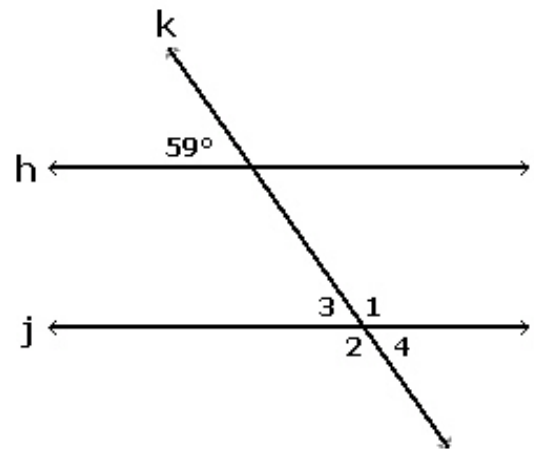C.   9 / 25
D.   (-5 / -3)^2
E.   (3/5)^2

18   The diameter of a golf ball is $4 \cdot 10^{-2}$

The diameter of the sun is $16 \cdot 10^4$

How many times larger is the sun than a golf ball?

A. $2.0 \cdot 10^7$

B. $4 \cdot 10^6$

19   In the diagram below, line h and line j are parallel lines. What is the measure of Angle 3?

[not drawn to scale]

A.   121 degrees
B.   59 degrees
C.   Not enough information to answer
D.   21 degrees

20   Select the value of k that makes the equation $\dfrac{4^k}{4^{-8}} = 4^4$ true.

A.   -12
B.   -4

21   Which of the following is equivalent to the expression below?

$$\frac{3^4 \cdot 3^2 \cdot 3}{3^{13}}$$

A. 3^{-4}

B. 3^{-6}

22   On a number line, $\sqrt{21}$ will be located the closest to which whole number ?

Directions: Answer the following question(s).

23 Indicate which comparison is true.

A. $\dfrac{4}{7} > \sqrt{19}$

B. $\sqrt{40} > 7$

C. $\dfrac{20}{\sqrt{30}} > \dfrac{2}{3}$

24 Write the following in standard form.

    4.95 x 10^7

A. 4.95

B. 495,000

C. 49,500,000

D. 4,950,000,000

25 What is the slope of the line determined by the points $(5, -3)$ and $(-9, -6)$?

A. $\dfrac{3}{14}$

B. $-\dfrac{3}{14}$

C. $\dfrac{14}{3}$

D. $-\dfrac{19}{4}$

26 Which expressions are equivalent to 5^7 ? Select **all** that apply.

A. $5 \cdot 7$

B. $5^1 \cdot 5^7$

C. $\dfrac{5^8}{5}$

D. $5^{-3} \cdot 5^{10}$

E. $\dfrac{5^{-4}}{5^3}$

27 The space probe Voyager I travels $3.255 \cdot 10^8$ miles in a year. At this rate, how far does the Voyager I travel during a period of 40 years?

A. $1.302 \cdot 10^{10}$ miles

B. $1.302 \cdot 10^6$ miles

C. $8.1375 \cdot 10^{10}$ miles

D. $8.1375 \cdot 10^6$ miles

28 For their summer jobs, Amanda and Julie are babysitting. Amanda starts with $250 in her savings account and Julie starts with $150 in her savings account. Since Amanda babysits more, she earns $25 per week while Julie earns $50 per week. After how many weeks will they have the same mount of money?

29 Helga wants to have a lot of helium-filled balloons at her party.

- The helium tank costs $58 to rent.
- Balloons cost $0.29 each.
- She wants to have 5 helium-filled balloons for each party guest.

Enter an equation that represents the total cost, C, in dollars of the hellium-filled balloons for *n* party guests.

30 Select two systems of equations that have no solution.

A. y = 3x +5

   y = 2x - 3

B. y = $^1\!/_3$x + 2

   y = $^1\!/_3$x + 3

C. y = -7x + 2

   y = -7x +1