

**Samples items for the Math Objectives Knowledge Checklist
(Form E)**

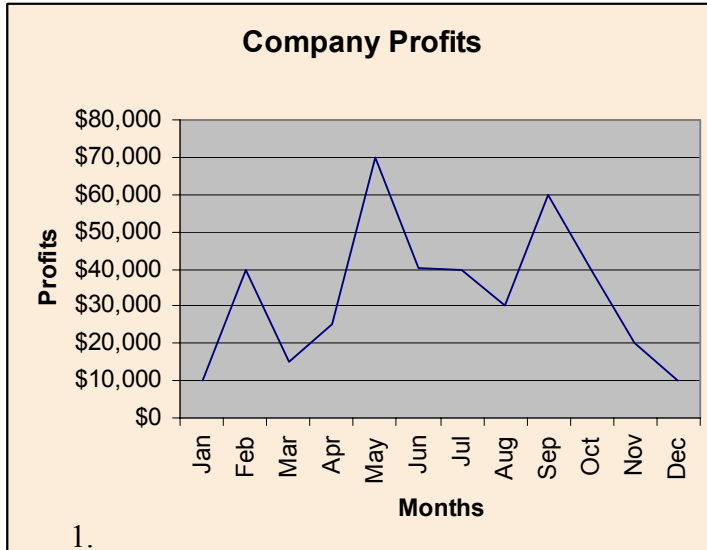
I. Using number concepts and computation skills

1. If a soda costs \$0.50, how many sodas can you purchase with \$5.00?
Answer: 10 sodas
2. If you have a \$10.00 bill and purchase a hat for \$3.50, how much change should you receive?
Answer: \$6.50
3. A pie is half-eaten, if I eat half of what is left, what percent of the pie will remain?
Answer: 25%
4. If a playpen is 6 feet long and 7 feet wide, what is its perimeter in feet?
Answer: 26 feet
5. If a bag holds 32 marbles and only 18 are left, how many were taken out?
Answer: 14 Marbles
6. $6 \times 3 - 2 \times 7/2 = ?$
Answer: 11

II. Solves word problems involving integers

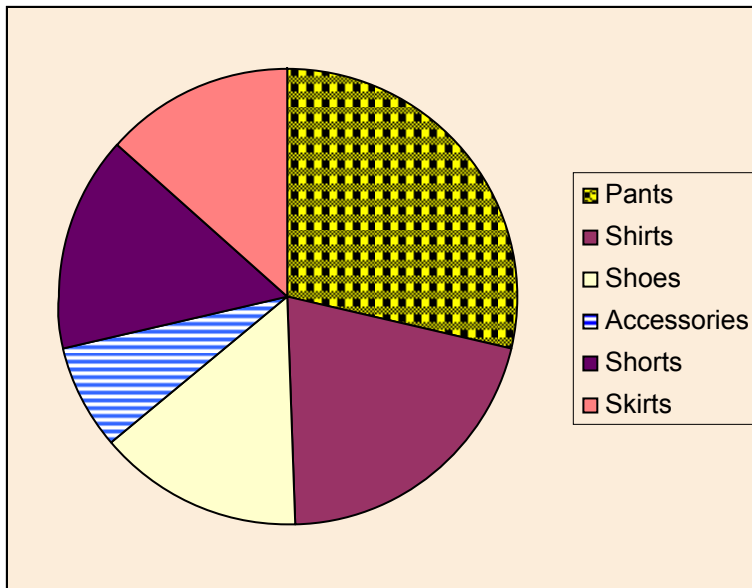
1. What is the quotient of 20 and 4?
Answer: 5
2. What is the sum of 2.3 and 16.7
Answer: 19
3. The difference between 7 and x is three. What is x?
Answer: 4
4. What is the product of $6/7$ and $21/36$
Answer: $1/2$
5. The sum of a number and 7 can be represented as _____.
Answer: $x + 7$

III. Interpret information from a graph, table or chart



Use for question 1-3

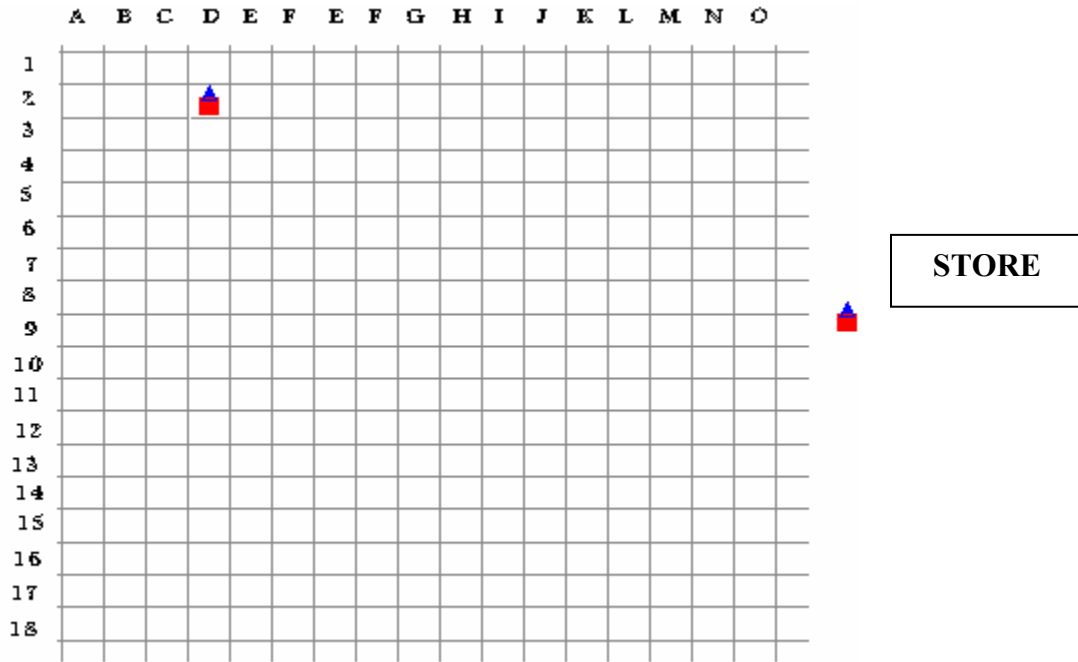
1. Was there an increase or a decrease between February and March?
Answer: Decrease
2. Which month received the greatest profits?
Answer: May
3. Between which two months did the profit remain nearly constant?
Answer: June and July



4. Which product accounts for the greatest number of items?
Answer: Pants
5. Approximately what percentage do pants and shirts account for?

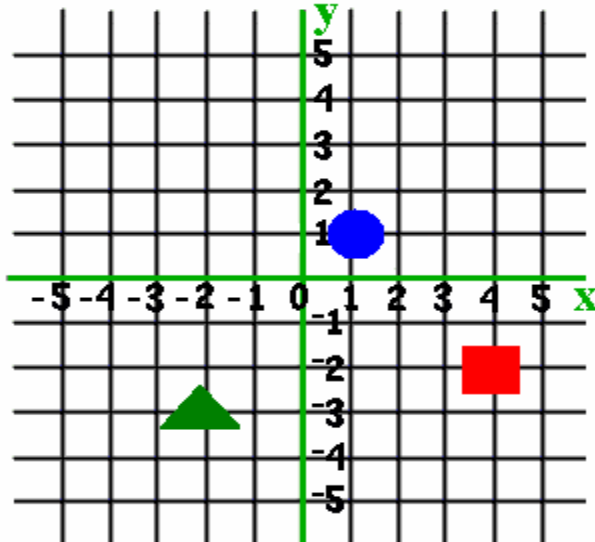
Answer: 50%

IV. Graphing numbers or number relationships



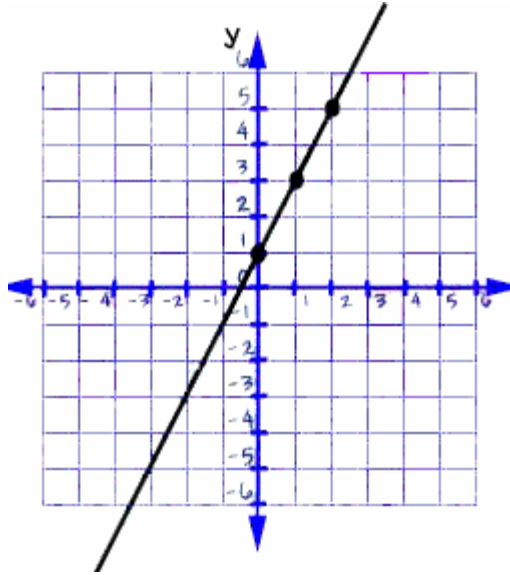
1. What are the coordinates of the store?

Answer: D2



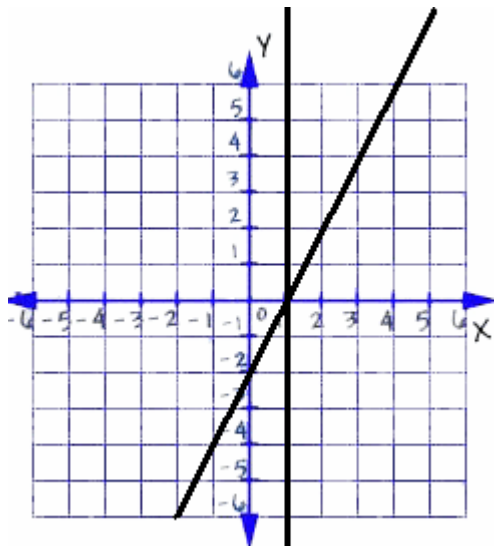
2. What is the ordered pair of the circle?

Answer: (1, 1)



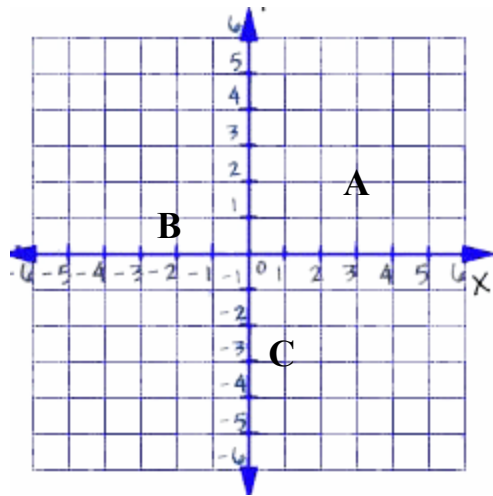
3. Does the line have a positive or negative slope?

Answer: Positive



4. At which point do the two lines intersect?

Answer: (1, 0)



5. Which letter is located on (3, 2)?

Answer: A

V. Solving one- and two- variable equations

1. If $3x + 16 = 2x$, solve for x.

Answer: $x = -16$

2. $x + y = 12$ and $x - y = 4$, find x and y through any method.

Answer: $x = 8$

$y = 4$

3. $x = 2y$ and $3x + 2y = 16$. Solve for x and y.

Answer: $x = 4$

$y = 2$

4. $x - 3 = y + 17$. If $x = 14$, find y.

Answer: $y = -6$

5. $y = -3x + 16$, find y.

Answer: $y = 4$

VI. Solving word problems involving one- and two- variables

1. If Jack and Jill added the apples they collected, they have 20. If Jack loses half of his apples, Jack and Jill will have 14 apples together. How many apples did Jack have? How many did Jill have?

Answer: Jack had 12 Apples

Jill had 8 Apples

2. If Mary's age is three less than four times Brandon's current age, and Brandon was nine 3 years ago, how old is Mary?

Answer: 45 years old

3. Two pencils cost \$0.10 and one pencil and one eraser costs \$0.15. How much money do pencils cost? How much do erasers cost?

Answer: Pencils cost \$0.05

Erasers cost \$0.10

4. jeans cost \$15.25 a pair (including tax). If \$91.50 were spent on jeans, how many pairs were purchased?

Answer: 6 pairs of jeans

5. A family needs a total of 120 yards of fence post. If the fence is to go around the perimeter of a yard, and the yard is 15 feet wide, how long is it?

Answer: 8 yards

VII. Understanding operations with algebraic expressions

1. Factor: $x^2-3x-18$

Answer: $(x-6)(x+3)$

2. Simplify $(x^2+12x+32)/(x^2+6x-16)$

Answer: $(x+4)/(x-2)$

3. Simplify: $(2x^2-6x+13) - (x^2-14x-13)$

Answer: $x^2+8x+26$

4. $(x-1)(x+2)$ is equivalent to which binomial?

Answer: x^2+x-2

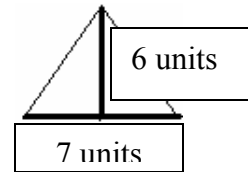
5. Simplify: $(60/x)(x^2/30)$

Answer: $2x$

VIII. Solving problems involving geometric figures

1. Find the area of a triangle with a base of 7 units and a height of 6 units.

Answer: 21 units^2



2. Find perimeter of a rectangle that is 71 inches wide and 80 inches long.

Answer: 302 inches

3. Find the radius of a circle whose area is $16 \pi \text{ mm}^2$.

Answer: Radius= 4mm

4. Find the area of a square whose side is 9 cm long.

Answer: 81 cm^2

5. If the area of a rectangle is 54 inches² and it is 9 inches long, how wide is it?

Answer: 6 inches

IX. Applying reasoning skills

1. If Walgreen's sells apple juice for \$0.50 a bottle and Kroger's sells apple juice for 5/ \$2.25, which is the better deal?

Answer: 5/ \$2.25

2. If Store A sells candy bars for \$0.45 each and store B sells the same candy bar for \$0.50 each, how many more candy bars will \$9.00 buy at store A than at store B?

Answer: 2 Candy Bars

3. Charlie overslept and has 2 hours to get to a conference before it starts. If he is 190 miles away and his car can go a maximum of 85 miles an hour, is it possible for him to make it to the conference in time by driving the speed limit of 75 mph?

Answer: No

4. A school lunch costs \$2.25. Doug has \$5.00. Will he have enough change leftover to purchase a \$2.00 drink?

Answer: Yes

5. A store has two options for savings. You may either use a \$25 off gift certificate, OR you can take 15% off your purchase. If a \$130 purchase is made, which option would save you the most money?

Answer: \$25.00 off