

Work for each problem should be shown on separate paper and attached to this packet.

Multiple-Choice Problems

1. Which value is NOT equal to the others?

- A. $\frac{16}{34}$ C. $\frac{9}{36}$
 B. $\sqrt{\frac{1}{16}}$ D. $\sqrt{\frac{3}{12}}$

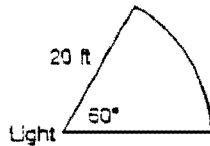
2. James is $5\frac{1}{2}$ feet tall. Jarod is $\frac{3}{8}$ foot taller than James. How tall is Jarod?

- F. $5\frac{1}{3}$ feet H. $5\frac{2}{5}$ feet
 G. $5\frac{1}{3}$ feet I. $5\frac{7}{8}$ feet

3. Evaluate $3x^2 - 4y^3$ when $x = 2$ and $y = -1$.

- A. 0 C. 12
 B. 8 D. 16

4. A security light comes on if an object is within a 60° angle and a radius of 20 feet. How long an arc does the light cover? Use $\pi \approx 3.14$. Round your answer to the nearest foot.



- F. 3 feet H. 21 feet
 G. 7 feet I. 63 feet

5. One angle is twice as large as another. The sum of the two angles is 60° . What is the measure of the smaller angle?

- A. 20° C. 45°
 B. 40° D. 60°

**Think, Solve, Explain:
Short-Response Problem**

5. The formula for the perimeter P of an isosceles triangle is $P = 2a + b$ where a is the measure of each of the equal sides and b is the measure of the third side.

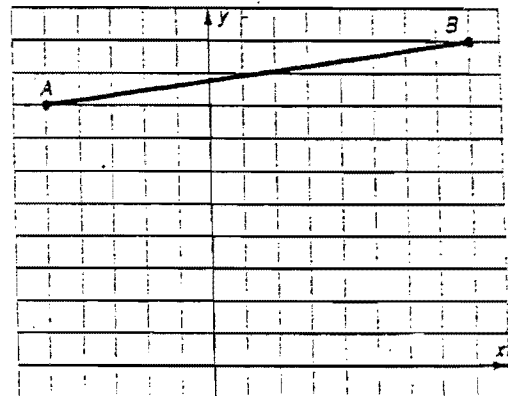
- A. Find P if $a = 3.5$ and $b = 2.25$.
 B. Find a if $P = 9.34$ and $b = 2.16$.

7. Simplify: $\left| \frac{-15}{5} - \frac{8}{3} \right|$

8. The diameter of an automobile tire is 24 inches. How many inches does the tire travel in 5 revolutions? Use $\pi \approx 3.14$.

9. A man who is 2 meters tall casts a shadow that is 5 meters long. At the same time, a tree casts a shadow that is 20 meters long. How tall is the tree?

10. In this graph, what is the y coordinate of the midpoint of line segment AB ?



**Think, Solve, Explain:
Short-Response Problem**

11. Jill is wrapping a present. It is in a box that measures 10 inches by 12 inches by 6 inches.

- A. In square feet, what is the surface area of the box?
 B. Jill's wrapping paper comes in a package that will cover 3 square feet. Will 2 packages be enough? Explain your reasoning.

Multiple-Choice Problems

12. The point $(-2, 0)$ is rotated 90° clockwise. What is its image?

- F. $(-2, 0)$
 G. $(2, 0)$
 H. $(0, 2)$
 I. $(0, -2)$

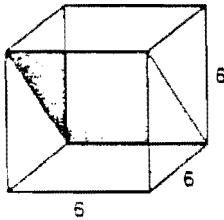
13. The sides of three similar pentagons are in the ratio 2:5:7. The area of the smallest pentagon is 40 square inches. What is the area of the largest pentagon?

- A. 140 square inches
- B. 250 square inches
- C. 490 square inches
- D. 700 square inches

14. What is the distance between points (5, 5) and (-2, -2)?

- F. $7\sqrt{2}$
- G. $2\sqrt{7}$
- H. $3\sqrt{2}$
- I. $2\sqrt{3}$

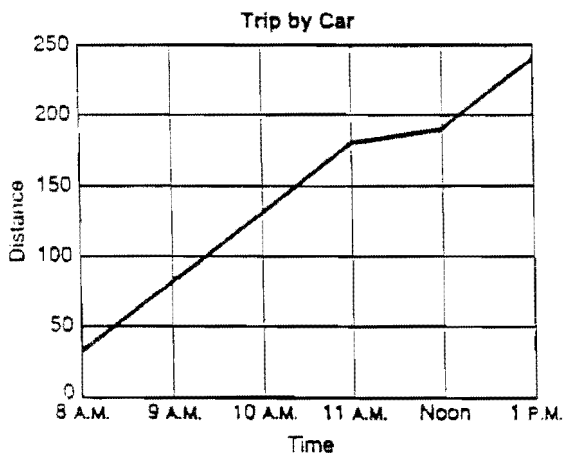
15. The drawing shows a cube with an edge of 6 inches. The shaded region is a rectangle. What is the perimeter of the shaded region?



- A. 24 inches
- B. $12 + 12\sqrt{2}$ inches
- C. $12 + 12\sqrt{3}$ inches
- D. 36 inches

Think, Solve, Explain:
Short-Response Problem

16.



- A. What was the average miles per hour between 9 and 10 A.M.?
- B. What might you conclude caused the change between 11 A.M. and noon? Explain your reasoning.

Multiple-Choice Problems

Items 17 and 18: Lindsey puts into a container 6 black, 10 red, 2 green, and 12 yellow jelly beans. She then takes jelly beans out at random without putting any back.

17. What is the probability that the first red jelly bean she gets will be on her second try?

- F. $\frac{3}{29}$
- G. $\frac{20}{87}$
- H. $\frac{10}{30}$
- I. $\frac{10}{29}$

18. What are the odds that Lindsey will get a red jelly bean on her first try?

- A. $\frac{1}{3}$
- B. $\frac{1}{2}$
- C. 2
- D. 3

Think, Solve, Explain:
Extended-Response Problem

19. In a 7-game series, the Chargers and the Rams scored the following number of runs per inning.

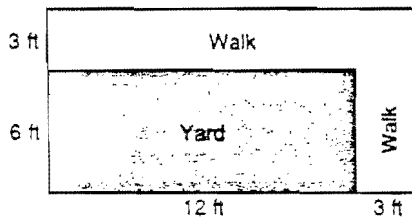
Inning	Chargers	Rams
1st	5	0
2nd	1	2
3rd	1	1
4th	0	5
5th	4	6
6th	4	1
7th	2	8
8th	4	4
9th	1	0

- A. Construct a double bar graph. Use the horizontal axis for innings and the vertical axis for runs.
- B. Which team is more likely to have more runs after 3 innings? Why?
- C. Which team is more likely to have more runs after 5 innings? Why?
- D. Which team is more likely to have won more games during this series? Why?

20. When you roll a pair of dice, what is the probability of getting a sum of 4 or less?
21. You choose 1 letter at random from the word MATHEMATICS. What are the odds that you will get a consonant?
22. $3x - 7 = 4(x - 8)$. Solve for x .
23. Ron has \$50.20 more than Jack. If Ron has \$105, how much money does Jack have?

Think, Solve, Explain:
Short-Response Problem

24. Stanley has a stone walkway around part of his yard:



By what percent will the size of the yard increase if he removes the walkway? Show your work.

Multiple-Choice Problems

25. What is the missing number?

1	2	3	4	5
25	23	19	13	?

- F. 5
G. 9
- H. 11
I. 13
26. $5x - 3y = 9$
 $3x - 5y = -1$
What is the value of x ?
- A. $x = 2$
B. $x = 3$
- C. $x = 5$
D. $x = 15$
27. Michael weighs 10 pounds less than twice Peter's weight. If $w =$ Peter's weight, which of the following represents Michael's weight?
- F. $3w$
G. $10 - 2w$
- H. $2w - 10$
I. $3w + 10$
28. $2x + 3 =$ one side of an equilateral triangle. Perimeter of the triangle = 39. What is the value of x ?
- A. $x = 5$
B. $x = 8$
- C. $x = 13$
D. $x = 18$