ACTAAP

Arkansas Comprehensive Testing, Assessment, and Accountability Program

Released Item Booklet

Benchmark Examination
Grade 6

April 2007
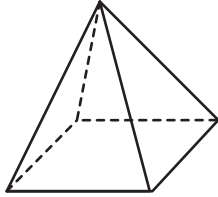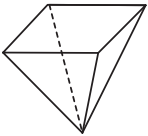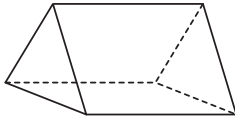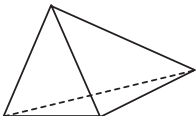### Administration

Arkansas Department of Education

CALCULATOR NOT PERMITTED—ITEMS 1–8

1. Carmen drew the square-based pyramid, shown below, on the board.

Which of the following figures represents a **different** view of Carmen's square-based pyramid?

* A.

B.

C.

D.

2. Mr. Jones asked 75% of his class to stand up. What fraction represents this percentage?

A. $\dfrac{1}{4}$

B. $\dfrac{5}{7}$

* C. $\dfrac{3}{4}$

D. $\dfrac{7}{5}$

3. Robbie needs to solve the equation $5n = 10$ in order to determine the value of n. What is the value of n?

* A.   2

B.   5

C.   11

D.   20

4. Marianne collected information about two United States presidents to compare their similarities and differences while they were in office. Which is the **best** way for her to display her findings?

A.   line graph

B.   circle graph

C.   function table

* D.   Venn diagram

5. Mr. Poe wants to measure the length and width of his bedroom floor so that he can order the correct amount of new carpet. What tool should Mr. Poe use to measure his bedroom floor?

* A.   a yardstick

B.   a protractor

C.   a thermometer

D.   a balance scale

2

6. Which equation describes the relationship between the *x*- and *y*-values for the coordinate points on the graph below?
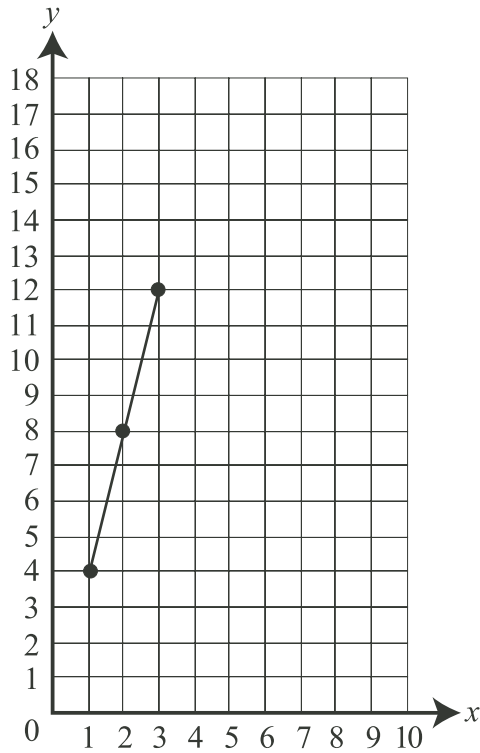
A. $y \times 4 = x$

* B. $x \times 4 = y$

C. $x + 3 = y$

D. $y \div 1 = x$

7. Which object has 90-degree rotational symmetry around its center point?

A.

* B.

C.

D.
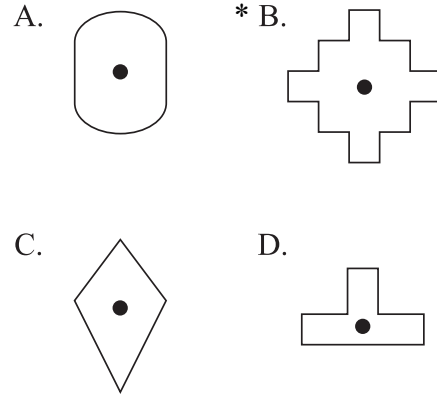
8. Chantell has decided to plant flowers in a garden. She needs to know the garden's area in order to estimate how much fertilizer to buy. Which unit of measure will she **most** likely use?

A.   cm

B. cm^2

C.   ft

* D. ft^2

3

CALCULATOR PERMITTED—ITEMS 9–40

9. Which number is missing in the pattern below?

   16 25 36 __?__ 64 81

   A. 45

   * B. 49

   C. 55

   D. 60

10. Camille walks 0.5 kilometers to school each morning. How many meters does Camille walk to school each morning?

   A.   5 meters

   B.   50 meters

   * C.   500 meters

   D.   5000 meters

11. Carlos likes to play basketball. In his last game, he took 12 shots and made 3 of them. What percentage of shots did Carlos make?

   A. 12%

   B. 15%

   * C. 25%

   D. 75%

12. The table below lists the prices of items at Kathy's Craft Shop.

Kathy's Craft Shop Price List	
knitted socks	$ 8
carved animal	$ 4
hair bow	$ 4
leather wallet	$ 6
candle holder	$ 4
candle	$ 4
photo frame	$12
stamped cards	$ 6

   What is the mean (average) price?

   A. $4

   * B. $6

   C. $5

   D. $8

13. What type of figure is shown below?
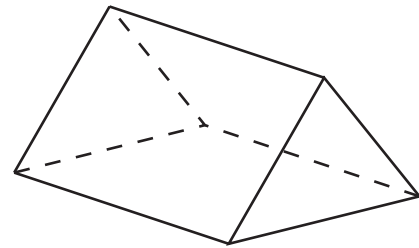
   * A. triangular prism

   B. rectangular prism

   C. triangular pyramid

   D. rectangular pyramid

4

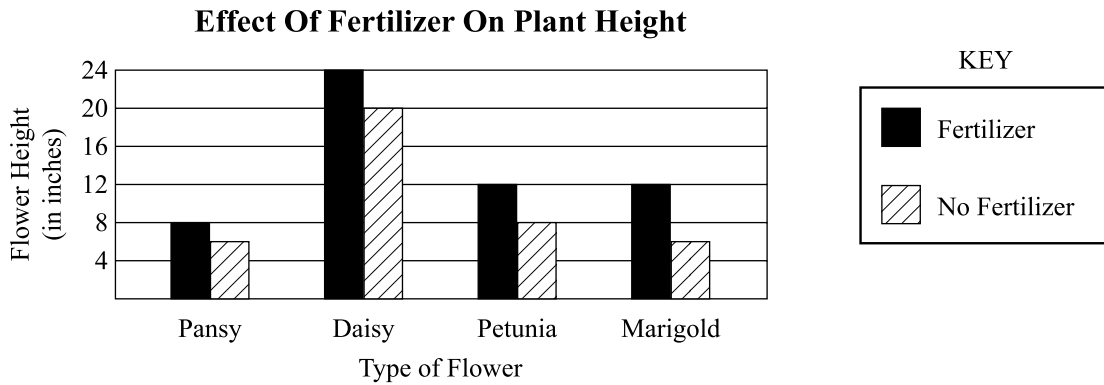**14.** The results of putting fertilizer on plants are shown on the bar graph below.

Effect Of Fertilizer On Plant Height

Which flower had the **greatest** increase in height when fertilizer was used, as compared to when no fertilizer was used?

   A.   Pansy

   B.   Daisy

   C.   Petunia

 * D.   Marigold

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15. Philip is working on a 500-piece jigsaw puzzle. He has put 350 pieces together. What percentage of the puzzle has he completed?

   A.   15%

   B.   30%

 * C.   70%

   D.   85%

16. It takes Mrs. Little exactly 2 hours and 30 minutes to drive from her home to Little Rock. Her average speed is 60 miles per hour. How far is Mrs. Little's home from Little Rock?

   A.   120 miles

 * B.   150 miles

   C.   180 miles

   D.   230 miles

17. Mr. Smilton drew the figure below on the board.
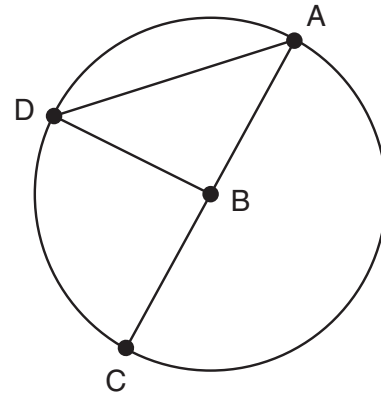
What word describes line segment AD?

 * A.   chord

   B.   radius

   C.   diameter

   D.   perpendicular

18. What is the area of the backyard shown below?

18 ft

Backyard   19 ft

A.   37 square feet

B.   74 square feet

C.   148 square feet

* D.   342 square feet

19. Tad kept a tally sheet, as shown below, of the points scored by the top five members of the sixth-grade basketball team.

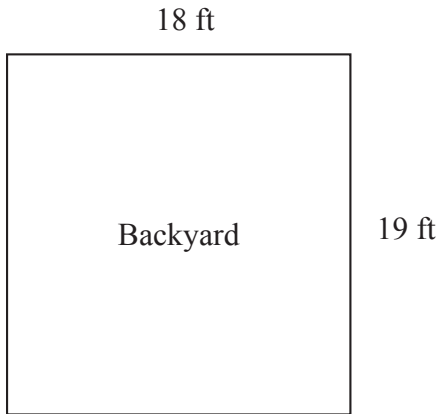| Tad's Tally Sheet	
Top Players	**Points Scored**
Kerry	卌 卌
Philippe	卌 卌 卌 卌 |||
Cedric	卌 卌 卌 卌
Joachim	卌 卌
Juan	卌 卌 卌 ||

Which two players' combined scores equal $\frac{1}{2}$ of the total points scored?

A.   Cedric and Philippe

B.   Cedric and Joachim

* C.   Juan and Philippe

D.   Juan and Kerry

20. Lee has twice as many nails as he has bolts. He has 70 nails. How many bolts does he have?

* A.   35

B.   37

C.   68

D.   72

21. Mr. Hamm created the function table below.

input n	output ?
3	1
9	3
27	9
81	27

What rule did he use to find the output number?

A. $n + 3$

B. $n - 2$

C. $n \times 9$

* D. $\frac{n}{3}$

22. Jay's brother earns $134.67 each week delivering newspapers. How much money does Jay's brother make in one month (4 weeks)?

A. $ 21.16

B. $ 33.67

C. $426.48

* D. $538.68

6

23. John's bowling team practiced four nights this week. He bowled two games each night, as shown in the table below.

John's Bowling Scores		
	Game 1	Game 2
Night 1	256	298
Night 2	245	273
Night 3	289	286
Night 4	267	266

Which equation will help John find the range of scores for all eight games? Let r represent the range.

  * A. $298 - 245 = r$

    B. $286 - 267 = r$

    C. $266 - 256 = r$

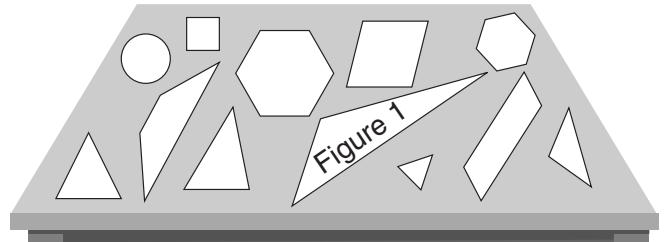   D. $256 - 298 = r$

24. Kyrie estimated the angle measure of angle ABC below.
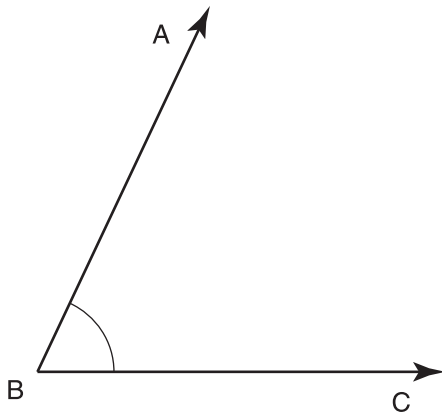
Which is the **best** estimate for angle ABC?

    A.   45°

  * B.   65°

    C.   85°

    D.   115°

25. Paul glued several different geometric figures to his tabletop for decoration.

What type of geometric figure is Figure 1?

    A.   right triangle

  * B.   scalene triangle

    C.   isosceles triangle

    D.   equilateral triangle

26. Madison has recorded the growth of a flower on the line graph below.

Growth of a Flower
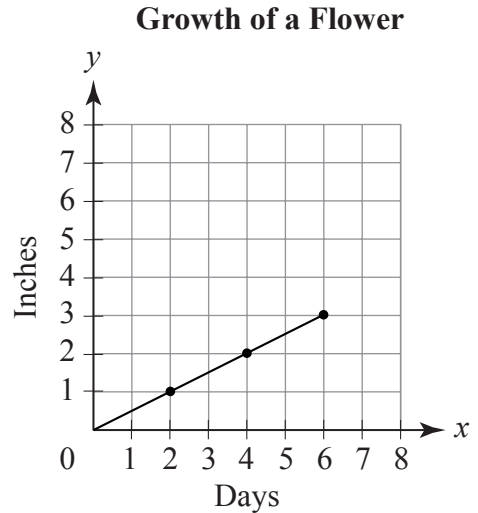
If the flower plant continues to grow at the same rate, what will be the coordinates for the next graph point?

    A.   (4, 7)

    B.   (4, 8)

    C.   (7, 4)

  * D.   (8, 4)

27. What is the distance between 2 and 14 on the number line below?

   * A.   12

   B.   13

   C.   14

   D.   16

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28. LaToya measured the lengths of four tree frogs in science class. She displayed her data in the chart below.
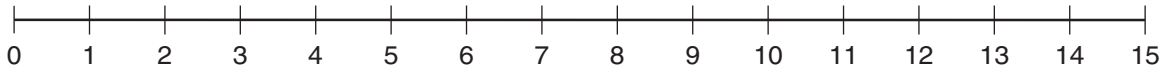
Tree Frogs' Lengths	
Tree Frog Number	**Length (in inches)**
1	$5\frac{1}{2}$
2	$5\frac{1}{4}$
3	$5\frac{1}{8}$
4	$5\frac{3}{8}$

What is the order of lengths of LaToya's tree frogs from **least** to **greatest**?

A. $5\frac{1}{2}$ $5\frac{1}{4}$ $5\frac{1}{8}$ $5\frac{3}{8}$

B. $5\frac{1}{8}$ $5\frac{1}{4}$ $5\frac{1}{2}$ $5\frac{3}{8}$

C. $5\frac{3}{8}$ $5\frac{1}{8}$ $5\frac{1}{4}$ $5\frac{1}{2}$

* D. $5\frac{1}{8}$ $5\frac{1}{4}$ $5\frac{3}{8}$ $5\frac{1}{2}$

29. Dylan spent 8 hours at an amusement park. The circle graph below shows the amount of time he spent doing various activities.

Time Spent at an Amusement Park
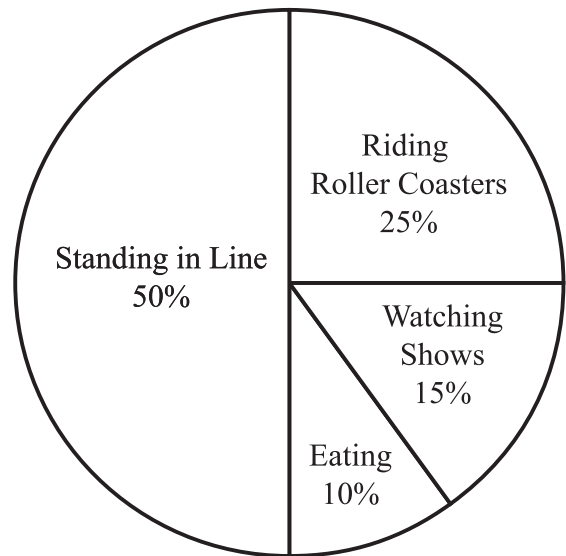
How many hours did Dylan spend riding roller coasters and standing in line?

A.   2 hours

B.   4 hours

* C.   6 hours

D.   8 hours

**30.** Which expression is the rule for finding the number of bulbs in the function table below? Let *n* represent the number of boxes.

Boxes of Light Bulbs

Number of Boxes *n*	Number of Bulbs ?
3	12
5	20
9	36

A. $n + 6$

B. $n - 6$

* C. $n \times 4$

D. $\dfrac{n}{4}$

31. The height of a horse is figured by using a measure called a "hand." A hand is equal to 4 inches and measures the horse from its withers to the ground.

withers

ground
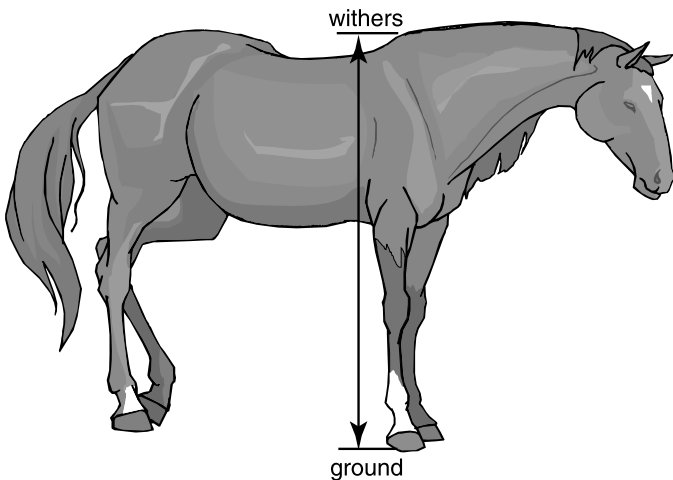
What is the height, in inches, of a horse that is 15 hands and 2 inches in height?

A. 15 inches

B. 17 inches

C. 60 inches

* D. 62 inches

32. Ida walked through her yard picking up trash. She started by walking southeast 10 feet, and then turned south and walked another 10 feet. She then walked straight back to her starting point.

Start

10 ft

10 ft
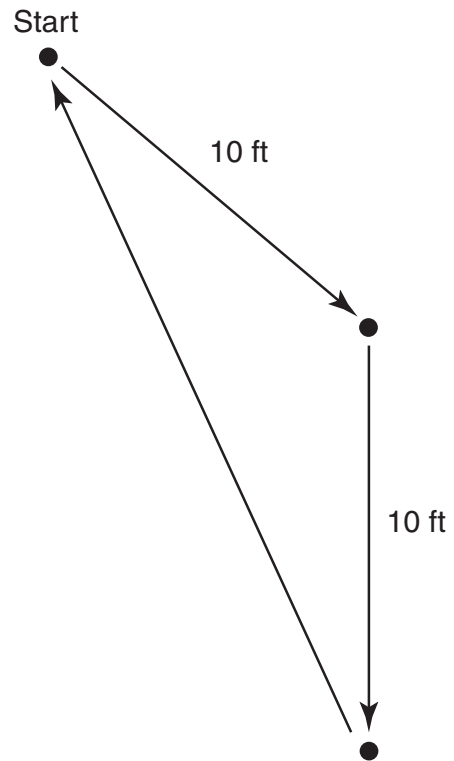
Which type of triangle did her walking pattern form?

A. acute

B. scalene

* C. isosceles

D. equilateral

9

33. The table below shows average high and low temperatures for Arkansas during the four seasons.

Seasonal Temperatures in Arkansas		
Season	High Temperature (°F)	Low Temperature (°F)
fall	70.7	48.1
winter	47.9	26.4
spring	69.5	46.3
summer	87.9	65.2

Which season has the **greatest** range in temperature?
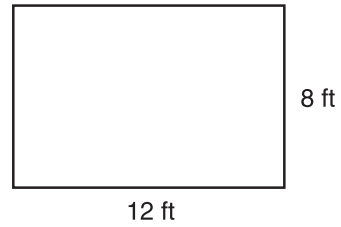
   A.   fall

   B.   winter

* C.   spring

   D.   summer

34. Which transformation illustrates a reflection over the line of the figure below?

   A.

* B.

   C.

   D.

35. Maria's rectangular garden has the same area as Kyle's rectangular garden shown below.

Kyle's Garden

8 ft

12 ft

What is one possible set of dimensions for Maria's rectangular garden?

   A.   7 feet by 13 feet

   B.   14 feet by 6 feet

* C.   16 feet by 6 feet

   D.   45 feet by 51 feet

36. Mrs. Hill wrote the following problem on the board and asked her students to solve it.

Every Tuesday (t), Kim practices the piano for 30 minutes.
Every Wednesday (w), she practices twice as long as on Tuesdays.
How long does Kim practice on Wednesdays?

Which equation below will help determine how long Kim practices on Wednesdays?

* A. $w = 2 \times t$

   B. $w = t + 2$

   C. $w + t = 30$

   D. $w - t = 60$

37. Justin and Darlene are playing with their baseball cards.

| Justin's and Darlene's Baseball Cards	
Teams	**Number of Cards**
Yankees	4
Cardinals	2
Mets	3
Blue Jays	6
Devil Rays	1

If they put all the cards in a box, and Justin draws first, what is the theoretical probability (or expected outcome) that he will draw a Yankees card?

A. $\dfrac{1}{3}$

* B. $\dfrac{1}{4}$

C. $\dfrac{1}{8}$

D. $\dfrac{1}{16}$

38. What is the area of the right triangle below?

4 inches

6 inches
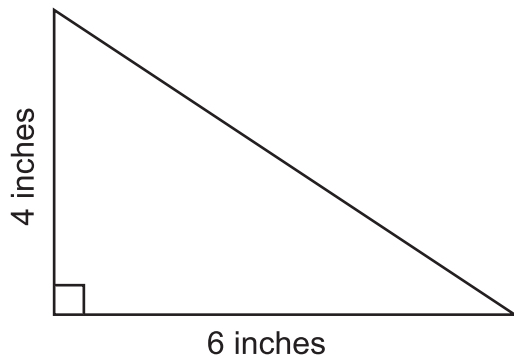
A.   8 in.^{2}

B.   10 in.^{2}

* C.   12 in.^{2}

D.   24 in.^{2}

39. Greg drew a straight line in the graph below.
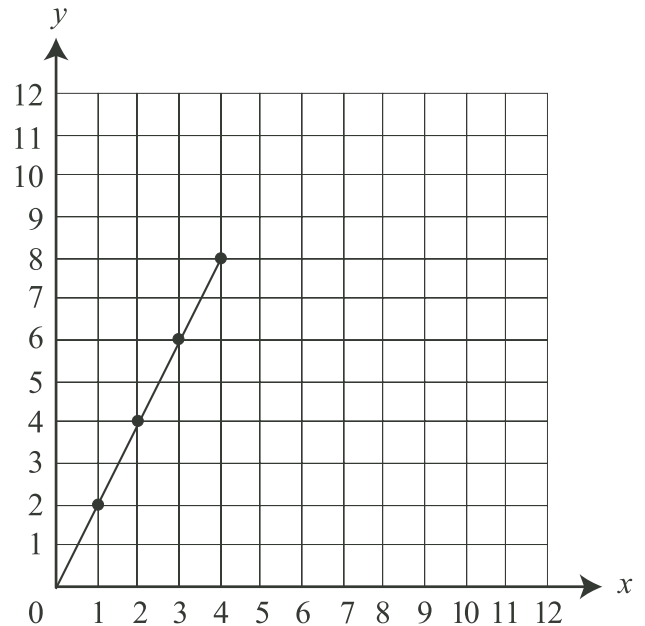
If Greg continued this pattern, which would be the next coordinate pair on the line?

A.   (5, 9)

* B.   (5, 10)

C.   (6, 11)

D.   (6, 12)

40. Mr. Cash asked his students to write down the first five prime numbers. Which of the following is an accurate listing of the first five prime numbers?

* A.   2 3 5 7 11

B.   1 3 5 7 9

C.   0 1 2 3 5

D.   2 3 7 9 12

MATHEMATICS OPEN-RESPONSE ITEM A

A. Bruce washes windows. His rate of pay is $8.00 per hour.

1.   How much money does Bruce earn if he works a 40-hour week? Show all your work and/or explain your answer.

2.   Bruce earns 1.5 times his normal rate of pay for each hour worked over 40 hours. One week, Bruce worked 46 hours. How much money did he earn? Show all your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM A

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The label "$" is included in Part 1 and Part 2 answers.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

MATHEMATICS OPEN-RESPONSE ITEM B

B. The teacher drew the figure below on the board.
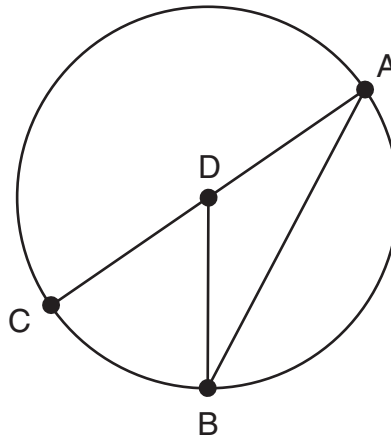
1. Name all the radii found in the figure with center point D. Be sure to label each radius **correctly**.

2. Explain the relationship between the measure of $\overline{AC}$ and the measure of $\overline{AD}$.

3. If the measure of $\overline{AC}$ is 6 cm, what is the measure of $\overline{AD}$? Show all your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM B

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The response contains the correct label of "cm" in Part 3.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

MATHEMATICS OPEN-RESPONSE ITEM C

C. Amy recorded the low and high temperatures for each school day last week, as shown on the bar graph below.

Low and High Temperatures

KEY

Low Temperatures

High Temperatures

Day
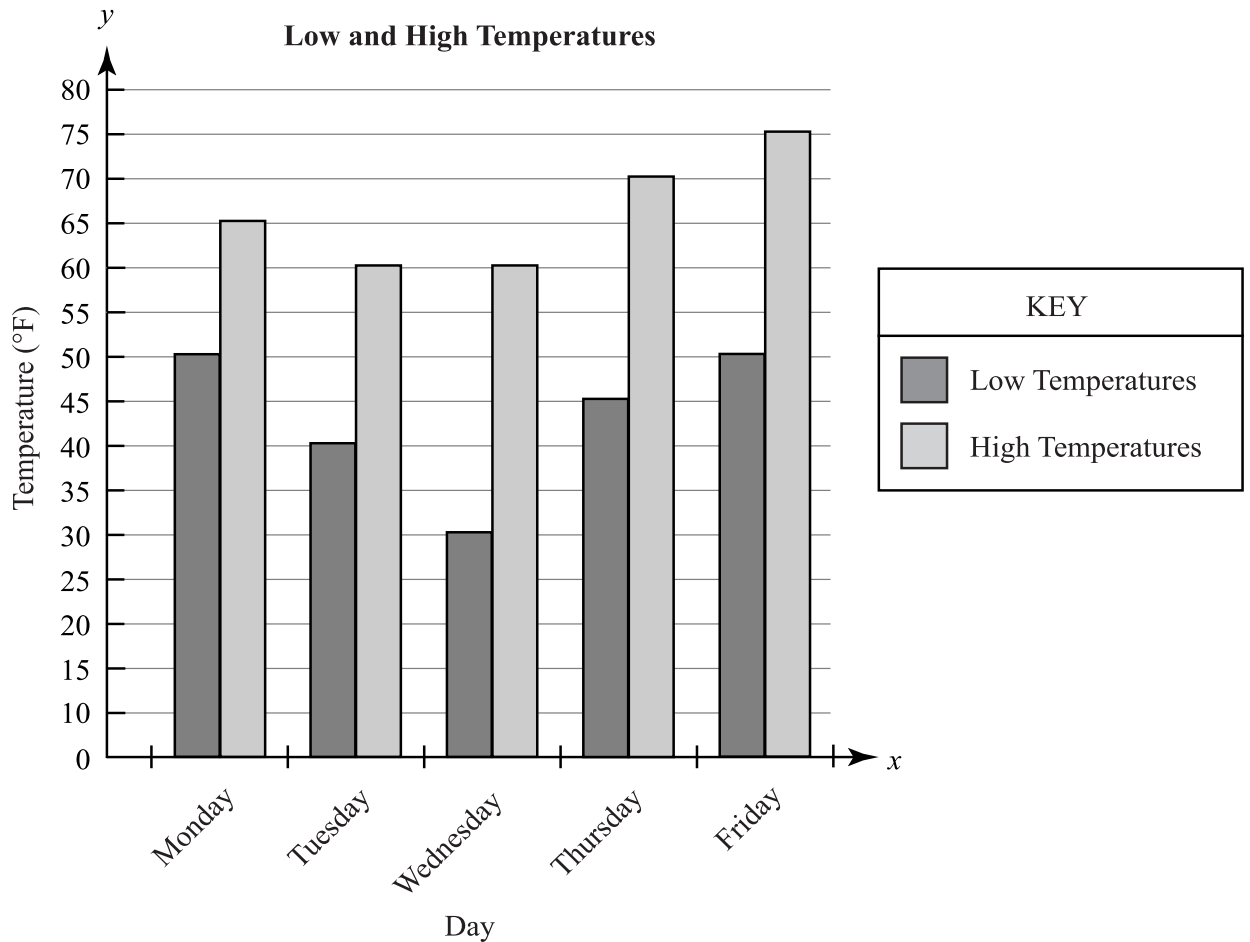
1. Which day had the **greatest** range in temperatures? Show all your work and/or explain your answer.

2. Two days have the same high temperature. Compare the low temperatures of these two days. Show all your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM C

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. Degrees are indicated at least one time in the response.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

MATHEMATICS OPEN-RESPONSE ITEM D

D.   Mrs. Dee ordered a 7.5-meter roll of paper to decorate two of her classroom bulletin boards.

1.   On her first bulletin board, Mrs. Dee used 250 centimeters of paper. How much paper is left to cover the other bulletin board? Show all your work and/or explain your answer.

2.   The rest of the paper was used on the largest bulletin board. Mrs. Dee only had 25 centimeters left over after she covered the board. How long is the largest bulletin board? Show all your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM D

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown. Ex: Answer to Part 1 is 500 (units missing). Answer to Part 2 is 475 (units missing).
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

MATHEMATICS OPEN-RESPONSE ITEM E

E. Ms. Harris started a new business making and selling T-shirts. She had to pay $6,075.00 to buy the materials and equipment she needed to start her business. Each T-shirt costs her $2.75 to make.

1. Ms. Harris will sell each T-shirt for $5.00. How much profit will she make on each shirt? Show all your work and/or explain your answer.

2. Ms. Harris is trying to calculate how many T-shirts she will need to sell in order to cover her entire expenses in starting the business. She calculated that she must sell at least 2,500 T-shirts in order to do so. Using words and/or numbers, explain if Ms. Harris's calculations are correct.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM E

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The label "$" is included in Part 1 answer.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)