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BLM 11-9

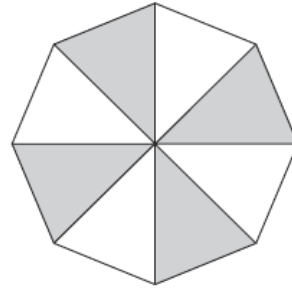
MathLinks 9 Adapted Practice Final Exam

For each multiple choice question, circle the correct answer.

For each numerical response question, write your answer in the space provided.

Use this information to answer #1–#2.

This is part of a game at an amusement park.



1. What is the order of rotational symmetry?

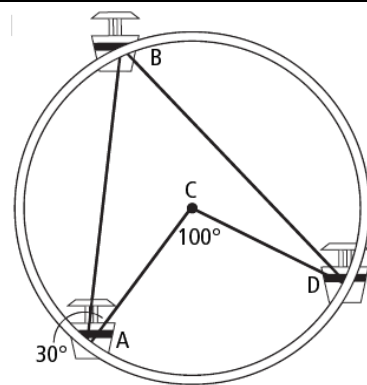
- | | |
|------------|------------|
| A 8 | B 6 |
| C 4 | D 2 |

2. What is the angle of rotation?

- | | |
|----------------------|----------------------|
| A 45° | B 90° |
| C 120° | D 180° |

Use this information to answer #3.

A Ferris wheel has braces AB, AC, DC, and DB.



3. What is the measure of the inscribed angle?

- | | |
|----------------------|----------------------|
| A 30° | B 50° |
| C 100° | D 200° |



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Use this information to answer #4.

This vest is in a clothing store window.



Numerical Response

4. How many lines of symmetry are on the front of this vest? _____

Use this information to answer #5.

The skill testing question on a ballot to win a free shopping spree is:

$$(6 - 1)^3 + 64 \div (-2)^3.$$

5. What is the answer to the skill testing question?

- A** -9
C 117

- B** 7
D 133

Order of operations:

- brackets
- exponents
- multiply and divide in order from left to right
- add and subtract in order from left to right

Use this information to answer #6.

A clothing store made a profit of \$1.3 million its first year, lost \$400 000 the second year, and lost \$300 000 the third year.

6. What was the average profit (+) or loss (-) over the 3 years?

- A** +\$200 000
C -\$200 000

- B** +\$600 000
D -\$600 000

$$\text{Average} = \frac{\text{sum of profit and losses}}{\text{number of years}}$$



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Use this information to answer #7 to #9.

Waiters at a restaurant are paid \$8 per shift and \$11.25 per hour.

money paid before starting hourly work

7. Which table of values shows the total wages a waiter is paid in the first 5 h of a shift?

A

Hours Worked, h	Total Wages, w (\$)
1	11.25
2	19.75
3	30.50
4	41.75
5	53.00

B

Hours Worked, h	Total Wages, w (\$)
1	19.25
2	38.50
3	57.75
4	77.00
5	96.25

C

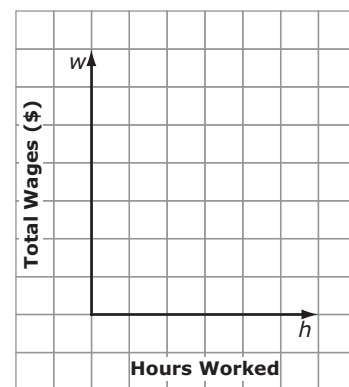
Hours Worked, h	Total Wages, w (\$)
1	19.25
2	22.50
3	33.75
4	45.00
5	56.25

D

Hours Worked, h	Total Wages, w (\$)
1	19.25
2	30.50
3	41.75
4	53.00
5	64.25

8. Which of the following would be used to determine the total wages for 3.5 h of work?

- A** interpolation **B** extrapolation
C simulation **D** assumption



9. An equation is written for the total wages for any number of hours within 1 shift. Which of the following represents the amount paid per shift?

- A** constant **B** variable
C numerical coefficient **D** linear equation

Write the equation to help you.



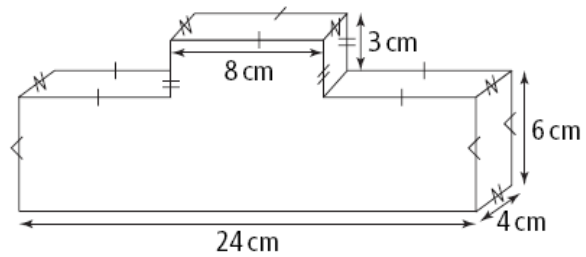
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Use this information to answer #10.

The tiered stand is covered with velvet to display jewellery.



10. What is the surface area of velvet on the exposed faces (all except the base).

- A** 348 cm^2
C 504 cm^2

- B** 444 cm^2
D 800 cm^2

Use this information to answer #11 to #12.

A poster displaying a laptop bag uses a scale of 1 : 5. The length of the bag on the poster is 6.5 cm.



11. What is the actual length of the bag?

- A** 32.5 cm
C 24.0 cm

- B** 26.0 cm
D 10.5 cm

Numerical Response

12. What is the scale factor of the reduction? _____



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Use this information to answer #13.

Every tenth person who makes a purchase at a store is asked a survey question.

13. The type of sampling used is best described as

- A** random **B** convenience
C systematic **D** stratified

Use this information to answer #14.

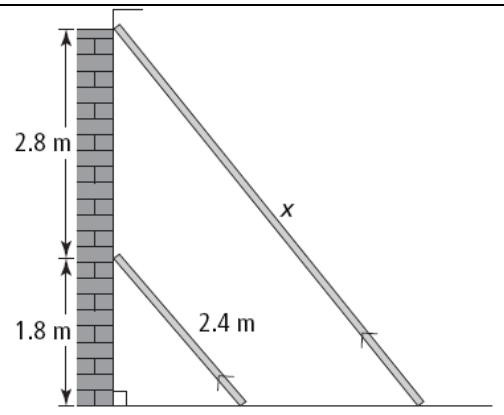
A shoe salesperson earns \$2.50 per pair of shoes sold. She needs to earn at least \$45.00 per shift.

Numerical Response

14. What is the least number of pairs of shoes the salesperson needs to sell per shift? _____

Use this information to answer #15.

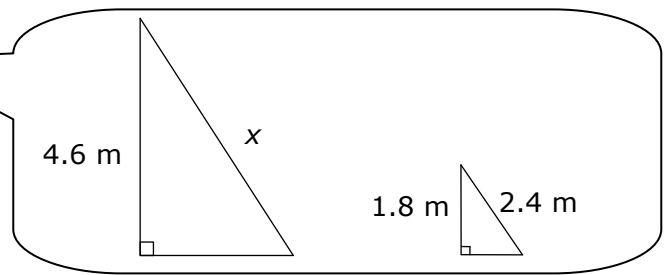
A long ladder is needed to hang decorations. The length of the ladder needed is x .



15. What is the length of x , rounded to the nearest metre?

- A** 4 m
C 6 m

- B** 5 m
D 7 m



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Use this information to answer #16.

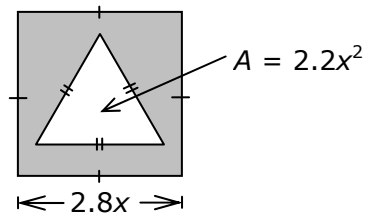
A membership at a movie rental store costs \$35.00/year.
Movie rentals are \$4.00 with a membership and \$6.95 without.

Numerical Response

- 16.** What is the least number of movies that would need to be rented in a year to make buying a membership worthwhile? _____

Use this information to answer #17.

A square has side lengths $2.8x$.
An equilateral triangle with an area of $2.2x^2$ is in the centre of the square.



- 17.** What is the area of shaded part?

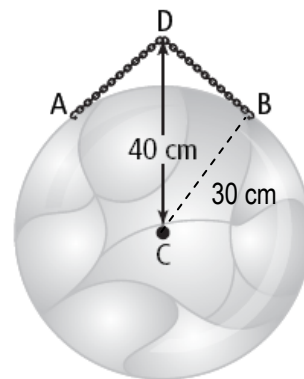
A $0.6x$
C $5.64x$

B $0.6x^2$
D $5.64x^2$

Find the area of the square, first.

Use this information to answer #18.

The radius of a stained glass decoration is 30 cm.
A chain attached at A and B so that AD and BD are tangent to the circle.



- 18.** What is the *total* length of the chain, to the nearest centimetre?

A 27 cm
C 53 cm

B 32 cm
D 64 cm



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Use this information to answer #19.

Shaded tiles are positive and white tiles are negative.

19. Which multiplication statement is shown above?

A $(3x)(-2x + 1) = -6x^2 + 3x$

B $(-3x)(2x + 1) = -6x^2 - 3x$

C $(-3x)(-2x + 1) = -6x^2 - 3x$

D $(3x)(-2x - 1) = -6x^2 - 3x$

Use this information to answer #20.

Shaded tiles are positive and white tiles are negative.

20. What is the quotient of the division statement modelled above?

A $-2x - 4$

B $-2x + 4$

C $2x + 4$

D $2x - 4$



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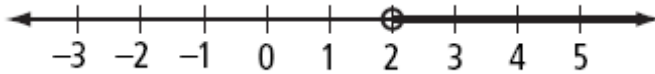
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Use this information to answer #21.

The number line shows a solution to an inequality.

**21.** Which inequality has the solution shown above?

A $2x + 5 \geq 9$

B $-2(x - 7) < 10$

C $\frac{x}{3} + 6 < 4$

D $6x + 8 < 4x + 12$

22. Which is an influencing factor when collecting data?**A** ethics**B** bias**C** cost**D** all of these**23.** Which equation has a solution of $x = 4$?

A $\frac{x}{2} + 1 = \frac{3}{4}$

B $\frac{-5.2}{x} = -1.3$

C $\frac{2x - 1}{4} = \frac{5x - 6}{4}$

D $1.2(4x + 6) = 8.4$

Use this information to answer #25.

The algebra tiles model 2 polynomials that are to be added.

**25.** What is the sum?

A $4x^2 - 4x + 5$

B $-2x^2 - 2x + 5$

C $-4x^2 + 4x - 5$

D $2x^2 + 2x - 5$

26. Which polynomial is *not* a degree of 2?

A $4 + 2x$

B $xy - 2$

C $x^2 + 3$

D $x^2 + xy - 1$



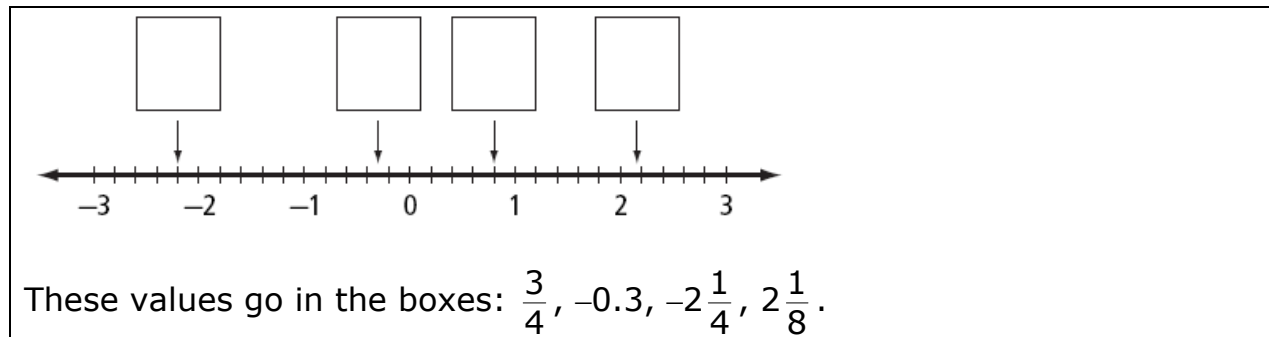
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Use this information to answer #27.



Numerical Response

27. Write the numbers in correct order from lowest to highest.

Use this information to answer #28.

$x + y + 5$	$x^2 + 2$
$3x^2 - 4x + 1$	$xy + x + 2$

28. Except $x^2 + 2$, all of the expressions are best described as

- A** polynomials **B** monomials
C binomials **D** trinomials

29. A bacterium triples every hour. If there are 35 bacteria present to start, how many will be present in 3 h?

- A** 105 **B** 945
C 315 **D** 2835

30. What is the value of $2 \times \left(\frac{3}{4}\right)^3$?

- A** $\frac{18}{12}$ **B** $\frac{27}{32}$
C $\frac{27}{64}$ **D** $\frac{18}{128}$



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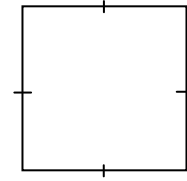
31. Which value is the best estimate for the side length of a square with an area of 6.4 cm^2 ?

A 0.8 cm

B 2.5 cm

C 3.2 cm

D 12.8 cm



Use this information to answer #32.

A store carries just 1 brand of jeans.

Due to poor sales, the owner is going to switch to a brand that appeals more to 15- to 30-year olds.

32. To decide which brand to switch to, the owner decides to collect data.

a) Who should he ask? _____

b) What question should he ask them? _____

Use this information to answer #33 to #34.

The store switches to a brand that costs \$89.99 before tax.

The store should make at least \$1000.00 per day from the jean sales.

33. Write an inequality that represents the required sales for the day.

Let _____ = _____.

Inequality: _____

34. How many pairs of jeans must be sold in the day to reach the minimum sales? Show your work.

Sentence: _____

