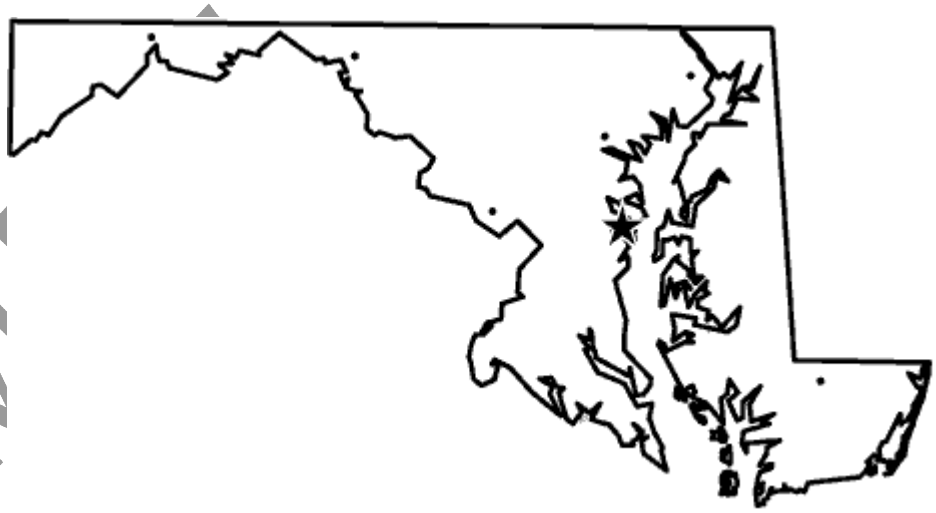
TESTS FOR HIGHER STANDARDS

MATHEMATICS



GRADE LEVEL TEST
FOR THE MARYLAND SCHOOL ASSESSMENT

Grade 8

Part I

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8-1.A.1.b

1. Look at the sequence below.

1, 2, 4, 8, 16, 32…

What is the *seventh* number in the sequence?

A 64
B 128
C 256
D 512

8-1.A.1.b

2. Look at the sequence below.

3, 8, 15, 24, 35…

What is the *sixth* number in the sequence?

A 46
B 48
C 63
D 78

8-1.A.1.c

3. Look at the sequence below.

4, 12, 36, 108…

What is the *sixth* number in the sequence?

A 144
B 324
C 432
D 972

8-1.A.1.c

4. Look at the sequence below.

16 , -8 , 4 , -2 , 1…

What is the *sixth* number in the sequence?

A .25
B -.5
C 1.5
D -1

8-1.B.1.a

5. Find the value of this expression.

8 + 8 ÷ (2 x 4)

A 9
B 24
C 32
D 36

8-1.B.1.b

6. $(y^3)(y^3) = ?$

A y^0
B y^3
C y^6
D y^9

T-SAMPLE

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8-1.B.1.e

7. At a pizza restaurant, you order a large pizza for $12.95 and a soda for $1.25. Sales tax is 4 ½%. What is the total of your bill including sales tax?

A $14.25
B $14.65
C $14.84
D $18.70

8-1.A.1.b

8. The weight of an object is related its length by the equation: weight (in pounds) = 3xLx3 (in feet). If the object is 3 feet long, what is its weight?

A 3 pounds
B 9 pounds
C 27 pounds
D 81 pounds

8-6.C.3.b

9. If the regular price is $85.00 and the discount rate is 10%, what is the sale price?

A $84.15
B $76.50
C $75.00
D $68.00

8-1.B.1.e

10. Jason's checkbook had a balance of $525.02 on May 5. On May 6, he wrote a check for $107.65 at the grocery store. On May 8, he wrote a check for $228.00 for his car payment. On May 9, his grandmother sent him $55.00 and he deposited this in his account. What is the balance of Jason's account after this deposit?

A $244.37
B $334.37
C $700.37
D $915.67

8-1.B.1.b

11. Evaluate $2x^2 + y(x + 1)$, given $x = 5$ and $y = 6$.

A 56
B 62
C 86
D 136

8-1.B.1.b

12. Evaluate: $x^2 + 2x$, if $x = 4$.

A 8
B 16
C 24
D 40

8-1.B.1.b

13. Evaluate: $a - 2(b + 2)$, if $a = 20$ and $b = 8$.

A 0
B 10
C 18
D 180

1-SAMPLE

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8-1.B.1.b

14. The volume of a five-sided box is given by the formula

$2x + 3x^2 - xy + y^2$, where x is the length of each side and y is the height of the box. What is the volume when $x = 4$ and $y = 2$?

A 44
B 48
C 52
D 58

8-6.C.2.a

15. The square root of 95 is between which of the following number pairs?

A 6 and 7
B 7 and 8
C 8 and 9
D 9 and 10

8-6.C.2.a

16. The square root of 19 is between which of the following number pairs?

A 2 and 3
B 3 and 4
C 4 and 5
D 5 and 6

8-6.C.1.b

17. Which of the following numbers is a perfect square?

A 18
B 24
C 49
D 80

8-6.C.3.a

18. If there were 100 questions on your math test and you got 85 of them correct, what is your grade, as a fraction, decimal, and a percent?

A $\frac{15}{100}$, 0.15, 15%
B $\frac{15}{100}$, 0.15, 1.5%
C $\frac{85}{100}$, 0.85, 85%
D $\frac{85}{100}$, 0.15, 8.5%

8-6.C.3.a

19. Which statement is true?

A 7:12 = $\frac{2}{12}$ = 12 to 7
B $\frac{1}{3}$ = 3 to 1 = 3:1
C 4:1 = 4 to 1 = $\frac{4}{1}$
D 8 to 5 = 8:5 = $\frac{5}{8}$

8-6.C.3.a

20. Which of the following statements is true?

A –1.25 = $-\frac{5}{4}$
B 0.75 > $\frac{3}{4}$
C 0.1< $-\frac{2}{10}$
D 0.55 = $\frac{5.5}{100}$

SAMPLE

Use the following volume formulas in answering questions 21and 23.

Volume of a rectangular-based pyramid:

$$V = \frac{1}{3}Bh$$

where B is the area of the base, and h is the height.

Volume of a right circular cone:

$$V = \frac{1}{3}\pi r^2 h$$

where r is the radius of the base and h is the height.

$$\pi \approx \frac{22}{7} \text{ or } 3.14.$$

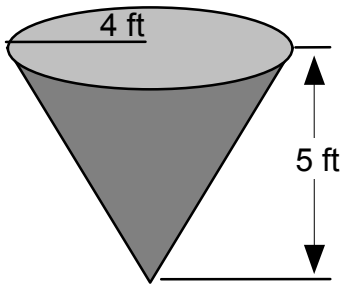
Volume of a cylinder:

$$V = \pi r^2 h$$

Where r is the radius of the cylinder and h is the height.

8-3.C.1.d

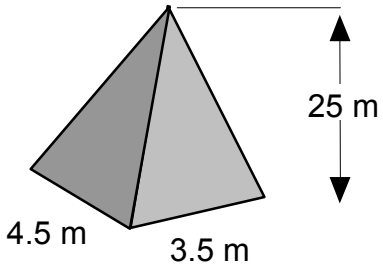
21. What is the volume of the figure below?



A 16.75 cu. ft.
B 20.93 cu. ft.
C 83.73 cu. ft.
D 96.75 cu. ft.

8-3.C.1.d

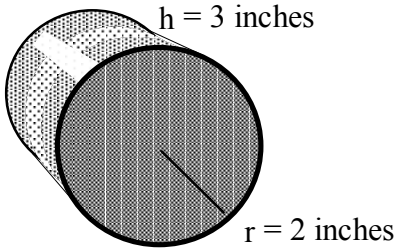
22. What is the volume of the rectangular-based pyramid shown below?



A 89.26 m^3
B 102.08 m^3
C 131.5 m^3
D 306.25 m^3

8-3.C.1.d

23. Find the volume of this cylinder.



π = 3.14

A about 12.00 cu. in.
B about 18.84 cu. in.
C about 37.68 cu. in.
D about 74.97 cu. in.

I-SAMPLE

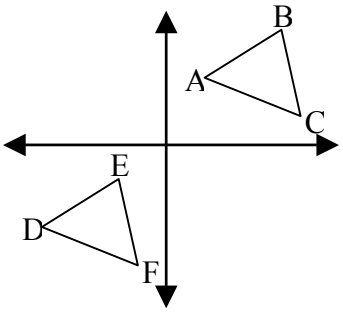
8-2.E.1.a

24. A geometric figure is plotted on an x-y coordinate grid. A transformation is applied to this figure by adding 2 to each x-coordinate and subtracting 2 from each y-coordinate What is this type of transformation called?

A a reflection
B a translation
C a rotation
D a relation

8-2.E.1.a

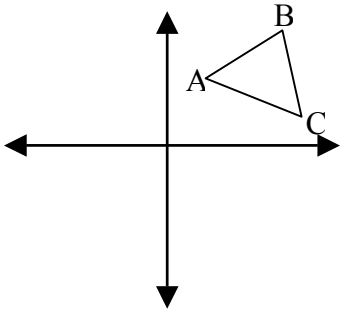
25. What was done to ΔABC to produce ΔDEF ?



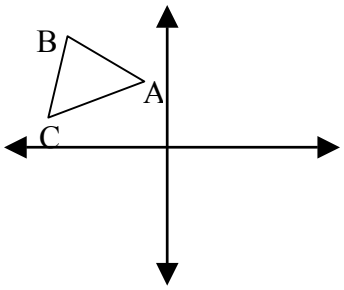
A translation
B rotation
C dilation
D reflection

8-2.E.1.a

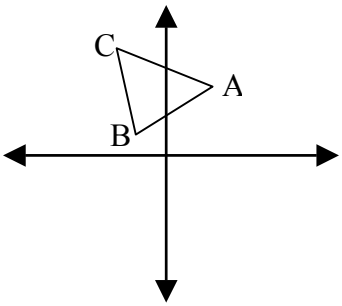
26. Which of these shows ΔABC reflected about the x-axis?



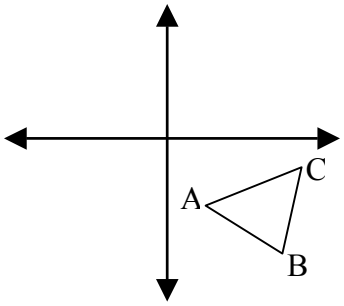
A



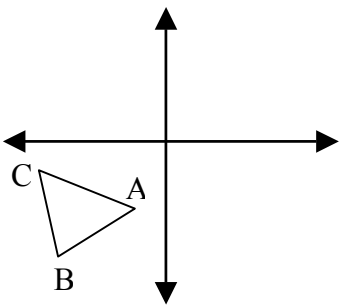
B



C



D



I-SAMPLE

8-2.E.1.a

27. In order to move a rectangle from quadrant II to quadrant I, you might

A flip the rectangle over the x-axis.
B slide the rectangle to the left.
C slide the rectangle to the right.
D rotate the rectangle 90^o around its center.

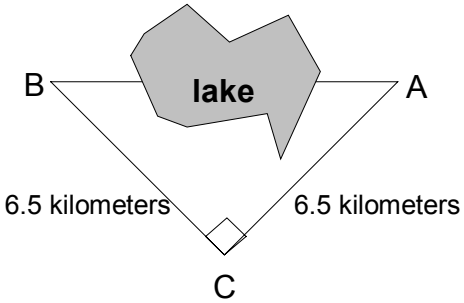
8-2.B.2.b

28. The lengths of the sides of four triangles are given below. Using the *Pythagorean Theorem*, which set of lengths forms a right triangle?

A 9, 12, 15
B 5, 12, 14
C 16, 30, 35
D 18, 36, 54

8-2.B.2.b

29. Jason needs to find the distance from point A to point B. However, there is a lake between these two points. So, to calculate this distance he can measure from point A to point C and from point C to point B, as shown below. How far is it from point A to point B?

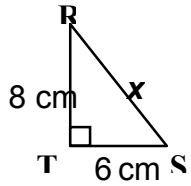


A about 5.7 km
B about 8.7 km
C about 9.2 km
D about 19.5 km

8-2.B.2.c

30. Using the *Pythagorean Theorem*, what is the measure of x?

A 9 cm
B 10 cm
C 15 cm
D 20 cm



8-5.B.1.a

31. What are the chances of flipping 4 heads in a row with a penny?

A $\frac{1}{16}$ **B** $\frac{1}{8}$

C $\frac{1}{4}$ **D** $\frac{1}{2}$

8-5.B.1.a

32. A species of coral reef fish swims in groups of 1 male and 4 females. Jacques Cousteau nets just one of these fish. What is the probability that it is a female?

A 0%
B 20%
C 80%
D 100%

T-SAMPLE

8-5.B.1.a

33. If you roll a pair of six-sided dice, what is the chance that the numbers displayed on the dice will add to 7?

A $\frac{1}{36}$

B $\frac{1}{12}$

C $\frac{1}{6}$

D $\frac{1}{3}$

8-5.B.1.a

34. There are 2 red marbles, 10 orange marbles, and 4 white marbles in a bag. What is the probability of picking a red or a white marble?

A $\frac{1}{5}$

B $\frac{1}{4}$

C $\frac{3}{8}$

D $\frac{3}{5}$

8-5.A.1.a

35. Jackson has 3 different books. How many different ways can he arrange the books on a bookshelf?

A 3
B 6
C 9
D 12

T-SAMPLE

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Use the table below to answer question 36.

x	*y*
3	8
4	10
5	12
6	14
7	16

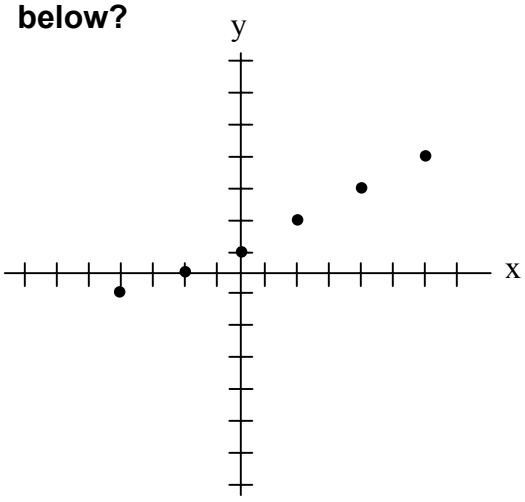
8-1.B.2.a

36. What is the relationship between x and y?

A $x + 2 = y$
B $2x + 2 = y$
C $2y \bullet 2 = x$
D $x + 2 = 2y$

8-1.B.2.a

37. Which statement accurately reflects the relationship between x and y in the graph below?



A y is equal to $\frac{1}{2}x + 1$.
B y is equal to $2x - 1$.
C x is equal to $\frac{1}{2}y + 1$.
D x is equal to $2y - 1$.

8-1.B.2.a

38. What equation could represent this set of ordered pairs?

{ (1, - 2) (2, - 5) (3, - 8) (4, - 11) }

A $y = x - 7$
B $y = -2x^2 + x$
C $y = -3x + 1$
D $y = x - 3x^2$

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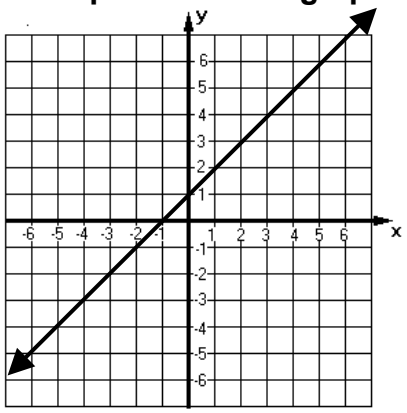
8-4.B.1.a

39. Which of the following tables corresponds to this graph?



A

x	*y*
-2	0
-1	1
0	2

B

x	*y*
0	-2
1	-1
2	0

C

x	*y*
2	0
1	-1
0	-2

D

x	*y*
-2	-1
-1	0
0	1

8-1.B.1.a

40. Solve: $\frac{4y}{3} < 8$

A $y < 6$
B $y > 6$
C $y < 8$
D $y > 8$

8-1.B.1.a

41. Solve: -7d + 18 < -17

A $d < 5$
B $d > 5$
C $d < 10$
D $d > 10$

8-1.B.1.a

42. Solve: 5L – 16 = 69

A 10.6
B 15
C 17
D 85

T-SAMPLE

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