

ACT MATH PRACTICE PAPER

1. Which of the following is equal to $75\sqrt{3}$?

9

$35\sqrt{3}$

$53\sqrt{3}$

$7.510\sqrt{3}$

2. If 80% of a number is 240, what is 125% of the number?

300

325

375

200

250

3. 76 eleventh-grade students turned in term papers on the United States Constitution. 3 students failed, 26 students received C's, 31 students received B's. The remaining students earned A's on their papers.

What percentage of students earned A's on their paper? (Round to the nearest percent.)

25%

21%

10%

50%

16%

4. Place the following numbers in order from smallest to greatest:

5.13, 5.11, 5.131, 5.111, 5.115

5.13, 5.115, 5.111, 5.11, 5.131

5.13, 5.131, 5.115, 5.111, 5.11

5.11, 5.111, 5.115, 5.13, 5.131

5.13, 5.111, 5.115, 5.11, 5.131

5.111, 5.115, 5.11, 5.13, 5.131

5. If there are 75 calories in a 6 oz glass of juice, how many calories will there be in an 8 oz glass?

100calories

225calories

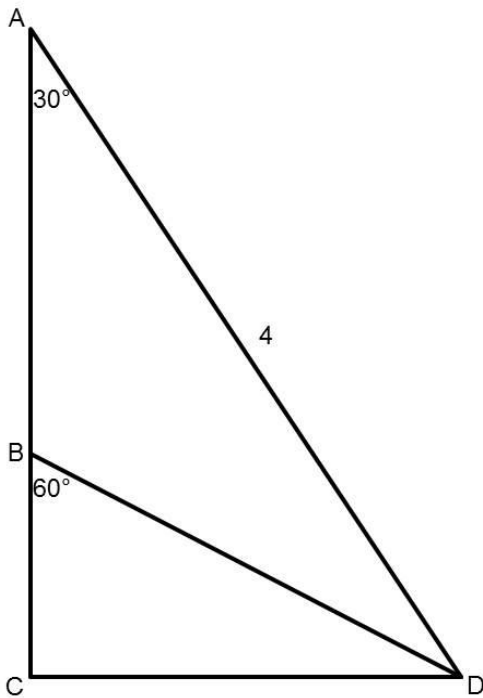
150calories

200calories

120calories

6. Two angles are supplementary and have a ratio of 1:4. What is the size of the smaller angle?

- 144°
- 45°
- 72°
- 36°
- 18°



Points A , B , and C are collinear (they lie along the same line). $\angle ACD = 90^\circ$
 $\angle ACD=90^\circ$, $\angle CAD = 30^\circ$ $\angle CAD=30^\circ$, $\angle CBD = 60^\circ$ $\angle CBD=60^\circ$, $\overline{AD} = 4$
 $AD=4$

7. Find the length of segment \overline{BD} .

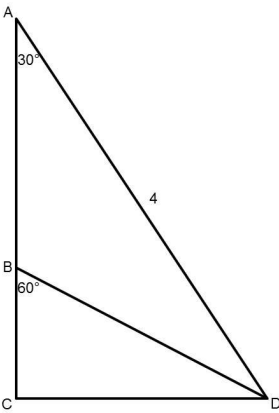
$2\sqrt{3}$

$\frac{2\sqrt{3}}{3}$

$\frac{\sqrt{3}}{2}$

2

$\frac{4\sqrt{3}}{3}$



Points A, B, and C are collinear (they lie along the same line). The measure of angle CAD is 30° . The measure of angle CBD is 60° . The length of segment \overline{AD} is 4.

8. Find the measure of $\angle ADB$.

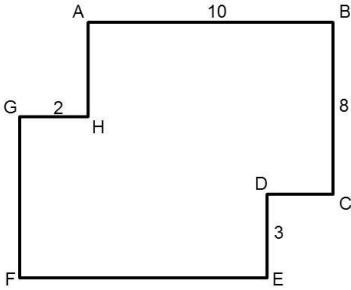
45°

90°

60°

30°

15°



All segments of the polygon meet at right angles (90 degrees). The length of segment AB is 10. The length of segment BC is 8. The length of segment DE is 3. The length of segment GH is 2.

9. Find the perimeter of the polygon.

-
- 44
-
- 42
-
- 46
-
- 40
-
- 48

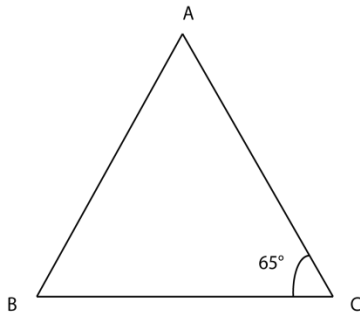
10. A quadrilateral $ABCD$ has diagonals that are perpendicular bisectors of one another. Which of the following classifications must apply to quadrilateral $ABCD$?

- I. parallelogram
- II. rhombus
- III. square

-
- I and II only
-
- I and III only
-
- II and III only

I, II, and III

11. Sides **AB** and **AC** in this triangle are equal. What is the measure of $\angle A$?



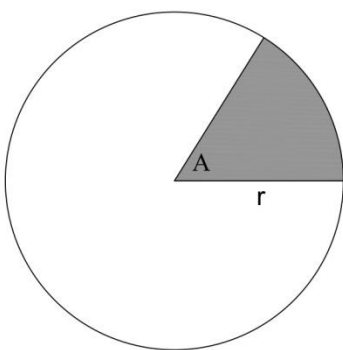
130°

65°

40°

180°

50°



12. The radius of the circle above is 4 and $\angle A=45^\circ$. What is the area of the shaded section of the circle?

π

4π

16π

8π

2π

13. Two legs of a right triangle measure 3 and 4, respectively. What is the area of the circle that circumscribes the triangle?

6.25π

12.5π

6π

5π

25π

14. A circle is inscribed in a square whose side is 6 in. What is the difference in area between the square and the circle, rounded to the nearest square inch?

4 in^2

14 in^2

11 in^2

8 in^2

12 in²

15. A thermometer reads an average of 47.5 °F on a Sunday, rises 2.9 degrees on Monday, and drops 1.7 degrees on Tuesday. What is the average reading of the thermometer on Tuesday?

45.8°F

48.7°F

49.2°F

50.4°F

44.6°F

16. Find the arithmetic mean of the following set of data:
{1,2,3,4,6,8}

3

8

5

6

4

17. Jameson received four grades on his algebra tests, which brought his average to an 88. What grade would he have to make on his final test in order to bring his average up to a 90?

98

100

96

97

99

43, 83, 54, 35, 77, x , y

18. If the median of the set of numbers is 54 and the mean is 56, which of the following could be the values of x and y ?

21 and 52

56 and 80

65 and 72

41 and 59

37 and 42

A bag contains 3 green marbles, 5 red marbles, and 9 blue marbles.

19. What is the probability of drawing a red marble?

53

512

517

59

5

20. What is the probability of getting a sum of four when rolling two six-sided dice?

19

736

16

56

112

21. What is the volume of a sphere with a diameter of 6 in?

$36\pi \text{ in}^3$

$288\pi \text{ in}^3$

$216\pi \text{ in}^3$

$72\pi \text{ in}^3$

$108\pi \text{ in}^3$

22. The radius of a sphere is 6. What is the approximate volume of this sphere?

288π

300π

20π

516π

138π

23. What is the surface area of a square pyramid with a height of 12 in and a base side length of 10 in?

150 in^2

420 in^2

260 in^2

360 in^2

100 in^2

24. What line is parallel to $5x+3y=8$, and passes through the point $(6,-4)$?

$y=32x-4$

$y=-53x+6$

$y=35x-2$

$y=-23x+5$

$$y=13x-3$$

25. Which pair of linear equations represent parallel lines?

$$y=x+2$$

$$y=-x+2$$

$$y=x-5$$

$$y=3x+5$$

$$y=-x+4$$

$$y=x+6$$

$$y=2x-4$$

$$y=2x+5$$

$$y=2x+4$$

$$y=x+4$$

26. Which line below is perpendicular to $5x+6y=18$?

$$y=-65x+8$$

$$y=56x+2$$

$$y=65x+3$$

$$y=-56x+65$$

$$y=56x+65$$

27. Which of the following sets of coordinates are on the line $y=3x-4$?

$$(1,2)$$

(2,2)

select

(3,4)

select

(2,-2)

select

(1,5)

28. What is the slope of a line running through points (7,3) and (8,-4)?

select

7

select

73

select

-7

select

1

select

-17

29. Which of the following equations does NOT represent a line?

select

$x^2+y=10$

select

$x-y=10$

select

$x=10$

select

$5y=10$

select

$x+y=10$

30. In the standard (x,y) coordinate plane, what is the perimeter of a triangle with vertices at (0,1), (4,7) and (8,1).

$8+52--\sqrt{}$

$8+413--\sqrt{}$

$8+452--\sqrt{}$

$213--\sqrt{}+8$

$13+413--\sqrt{}$