

Math Challengers Regional Competition

Face Off Round 2023

Some questions are easy and some are
hard.

The slide sequence is:

1. Question.
2. Question and Answer.
3. Blue Page.

A new question always follows a blue page.

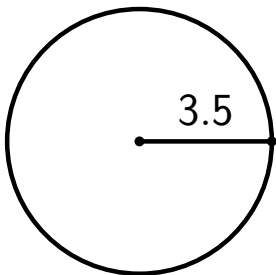
The next page is blue!

1. Calculate: $\left(\frac{3}{5} - \frac{4}{7}\right)^{-1} = ?$

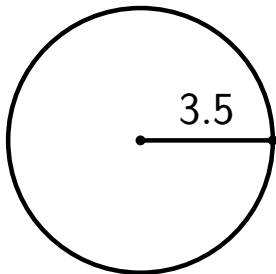
1. Calculate: $\left(\frac{3}{5} - \frac{4}{7}\right)^{-1} = ?$

Answer: ~~20~~ 35

2. Round the perimeter of a circle with radius 3.5 to the nearest integer.



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Answer: 22

3. If $2a + b = 121$, and $b + 2c = 69$, what is the value of $a - c$?

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Answer: 26

4. Store reduces the price of a \$20 t-shirt by 20%. Later the price is lowered again, this time by one-half of the reduced price. What is the final sale price of this t-shirt in \$?

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Answer: 8

5. The binary representation of N is 111111. What is the decimal value of N ?

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Answer: 63

6. If $4x + y = 32$ and $x = 6$. What is the value of y ?

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Answer: 8

7. What is the average value of
 $-3, 0, 3, 6, 9, 12$ and 15 ?

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−3, 0, 3, 6, 9, 12 and 15?

Answer: 6

8. What is the sum of all the even numbers between 3 and 23?

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Answer: 130

9. On a map, a 13-centimetres length represents 78 kilometres. How many kilometres does a 15-centimetres length represent?

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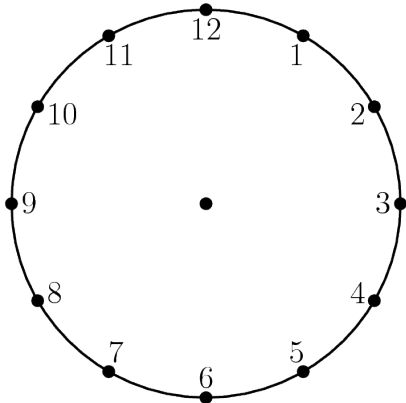
Answer: 90

10. How many integers are there between 3.8 and 23.5 ?

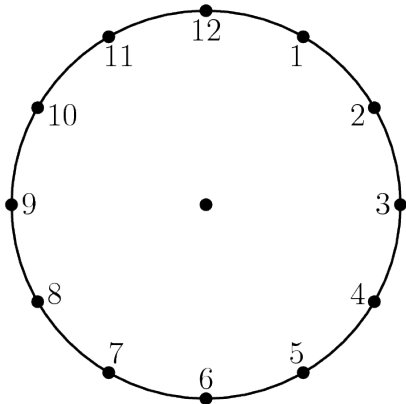
10. How many integers are there between 3.8 and 23.5 ?

Answer: ~~19~~ 20

11. What is the measure of the smaller angle, in degrees, formed by the hands of a clock at 8 o'clock?

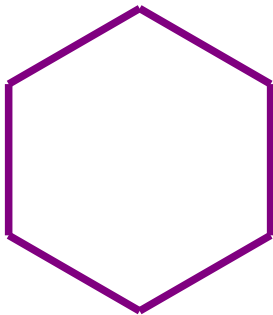


11. What is the measure of the smaller angle, in degrees, formed by the hands of a clock at 8 o'clock?

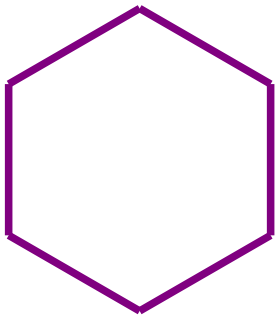


Answer: 120

12. How many lines of symmetry does a regular hexagon have?



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Answer: 6

13. What is the largest 2-digit prime number?

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Answer: 97

14. How many minutes are there in 13 hours?

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Answer: 780 (seconds).

15. Jane has 3 sisters and 5 brothers. Her brother Jacob has x sisters and y brothers. What is value of the product xy ?

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Answer: 16

16. On average, for every 4 iPhones sold at the a certain phone shop, 7 andriod phones are sold. If shop predicts that it will sell 28 iPhones tomorrow, How many Andriod phones does it expect to sell tomorrow?

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Answer: 49

17. Flora had a bag of 90 oranges. She sold $\frac{2}{3}$ of them to her friend. Next she sold $\frac{1}{3}$ at farmers market. How many oranges are left in the bag ?

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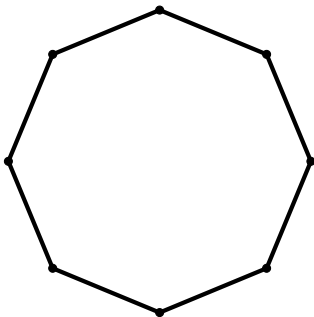
Answer: 20

18. Ronin should have added 33 to a certain number. Instead he subtracted 33 and obtained -11 . What is the result he would have obtained had he added 33 ?

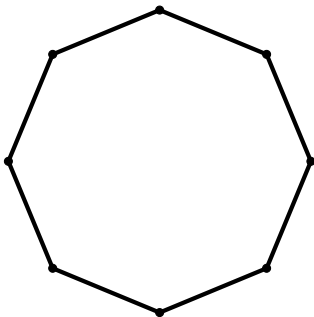
18. Ronin should have added 33 to a certain number. Instead he subtracted 33 and obtained -11 . What is the result he would have obtained had he added 33 ?

Answer: 55

19. How many different diagonals does a regular octagon(8 sides) has?



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Answer: 20

20. How many of the integers from 1 to 100, inclusive, have at least one digit equal to 9 ?

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Answer: 19