OSHWAL ACADEMY NAIROBI

Junior High

QUOTE OF THE WEEK:

“It is as impossible to withhold education from the receptive mind as it is impossible to force it upon the unreasoning.”
~~Agnes Repplierg~~

TERM III
WEEK 11
NEWSLETTER
2023/2024

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WEEK 11 ASSEMBLY AWARDS IN PICTURES

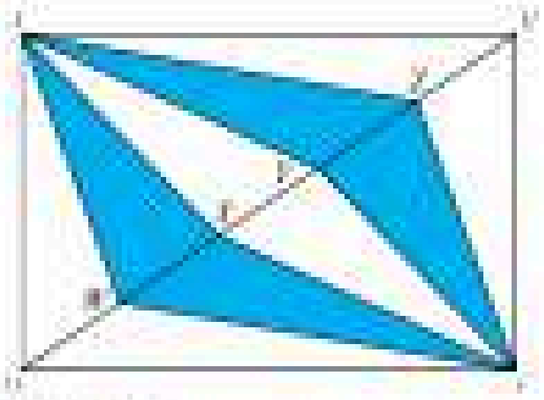
SPORTS CORNER

Join us in congratulating our Table Tennis boys' team for attaining overall position in their category at the Westlands Sub-county Racquet Sports. While on the other hand our Table Tennis girls' team qualified for the next tournament in their category. At the same time also our Badminton team comprising of some of the Senior high students who were once students at Junior High, attained overall position at the Westlands Sub-County Racquet Sports KSSSA games that were held at Aga Khan High School Nairobi. Each player gave their all, making the day full of electrifying experiences.

Our U 13 boys Rugby team won 30 - 10 against Potterhouse Schoo while U13 boys football team for edged out Potterhouse School 2 - 0

WEEK 10 MATHEMATICS CHALLENGE SOLUTION

CEMC.UWATERLOO.CA | The CENTRE for EDUCATION in MATHEMATICS and COMPUTING



Problem of the Week
Problem D and Solution
They're Blue

Problem

In rectangle $ABCD$, the length of side AB is 7 m and the length of side BC is 5 m. Four points, W, X, Y, and Z, lie on diagonal BD, dividing it into five equal segments. Triangles AWX, AYZ, CWX, and CYZ are then painted blue, as shown. Determine the area of the painted region.

Solution

Solution 1

Using the formula for area of a triangle, area $= \frac{\text{base} \times \text{height}}{2}$, we have area $\triangle ABD = \frac{7 \times 5}{2} = \frac{35}{2}$ m^2.

The five triangles $\triangle ADW$, $\triangle AWX$, $\triangle AXY$, $\triangle AYZ$, and $\triangle ABZ$ have the same height, which is equal to the perpendicular distance between BD and A. Since $DW = WX = XY = YZ = ZB$, it follows that the five triangles also have equal bases. Therefore, the area of each of these five triangles is equal to $\frac{1}{5}$(area $\triangle ABD$) $= \frac{1}{5}\left(\frac{35}{2}\right) = \frac{7}{2}$ m^2.

Similarly, the area of $\triangle BCD$ is equal to $\frac{7 \times 5}{2} = \frac{35}{2}$ m^2. The five triangles $\triangle CDW$, $\triangle CWX$, $\triangle CXY$, $\triangle CYZ$, and $\triangle CBZ$ also have the same height and equal bases. Therefore, the area of each of these five triangles is equal to $\frac{1}{5}$(area $\triangle BCD$) $= \frac{1}{5}\left(\frac{35}{2}\right) = \frac{7}{2}$ m^2.

Therefore, the area of the painted region is $4\left(\frac{7}{2}\right) = 14$ m^2.

Solution 2

Since $ABCD$ is a rectangle, $\angle DAB = 90^\circ$, so $\triangle ABD$ is a right-angled triangle. We can then use the Pythagorean Theorem to calculate $BD^2 = AB^2 + AD^2 = 7^2 + 5^2 = 49 + 25 = 74$, and so $BD = \sqrt{74}$, since $BD > 0$. Therefore, $DW = WX = XY = YZ = ZB = \frac{1}{5}(BD) = \frac{1}{5}\sqrt{74}$.

Using the formula for area of a triangle, area $= \frac{\text{base} \times \text{height}}{2}$, we have area $\triangle ABD = \frac{7 \times 5}{2} = \frac{35}{2}$ m^2.

Let's treat $BD = \sqrt{74}$ as the base of $\triangle ABD$ and let h be the corresponding height. Since the area of $\triangle ABD$ is $\frac{35}{2}$, then we have $\frac{\sqrt{74} \times h}{2} = \frac{35}{2}$ and so $\sqrt{74} \times h = 35$, thus $h = \frac{35}{\sqrt{74}}$.

$\triangle AWX$ and $\triangle AYZ$ both have height $h = \frac{35}{\sqrt{74}}$ and base $\frac{\sqrt{74}}{5}$, so

area $\triangle AWX$ = area $\triangle AYZ = \frac{1}{2}\left(\frac{\sqrt{74}}{5}\right)\left(\frac{35}{\sqrt{74}}\right) = \frac{7}{2}$ m^2.

Similarly, $\triangle CWX$ and $\triangle CYZ$ both have height $h = \frac{35}{\sqrt{74}}$ and base $\frac{\sqrt{74}}{5}$, so

area $\triangle CWX$ = area $\triangle CYZ = \frac{1}{2}\left(\frac{\sqrt{74}}{5}\right)\left(\frac{35}{\sqrt{74}}\right) = \frac{7}{2}$ m^2.

Therefore, the area of the painted region is $4\left(\frac{7}{2}\right) = 14$ m^2.

OSHWAL ACADEMY NAIROBI

JUNIOR HIGH

"COMPASS FOR LIFE SKILLS"

TERM 3 WEEK 11 SCHEDULE

30th June 2024 – 6th July 2024

Sunday – 30th June 2024

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Monday – 1st July 2024

- End-Term Exams

Tuesday – 2nd July 2024

- End-Term Exams

Wednesday – 3rd July 2024

- End-Term Exams

Thursday – 4th July 2024

- End-Term Exams End (Year 7-9)
- Year 10 Pre-Mocks

Friday – 5th July 2024

- Pre-Mocks

Saturday – 6th July 2024

- Pre-Mocks