**Logo, icon

Description automatically generatedFX Library Modules**

**Compound Areas**

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**Question**

Find the area of this shape. You can assume that sides that appear parallel are parallel.

<EFOFEX>
id:fxd{be19df90-bff4-45d8-9da2-9f16fd3c12cd}
FXGP:DP-VPMECBR
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{719f72a2-569d-4b75-a3f2-15ad0d8b5533}
FXGP:DP-VPMECBR
FXData:

</EFOFEX>

This is one way of subdividing the shape. Other divisions are acceptable.

<EFOFEX>
id:fxe{90ec8f68-b75d-4183-96dc-6ac74cc9610d}
FXGP:DP-VPMECBR
FXData:

</EFOFEX>

**Notes**

24 variations.

**Question**

Find the area of the shaded regions to the nearest square millimetre.

<EFOFEX>
id:fxd{6e8ec03b-ec77-4b56-a5a0-76ff2a73def5}
FXGP:DP-J4QZG3B
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{9b3ba171-f869-40d1-aeb1-908820b5257d}
FXGP:DP-J4QZG3B
FXData:

</EFOFEX>

Desired area is twice the area shown above.

<EFOFEX>
id:fxe{ad2d7765-f8c7-490e-944b-8f7d59e9ffc5}

FXData:

</EFOFEX>

<EFOFEX>
id:fxe{429e8d9e-88e4-49a5-8534-6181f9142421}
FXGP:DP-J4QZG3B
FXData:

</EFOFEX>

**Notes**

28 variations.

**Question**

Find the area of the shaded region bounded by these four congruent circles

<EFOFEX>
id:fxd{dc66fb1a-48f6-45f8-abe9-20bf474d18ba}
FXGP:DP-5K7DUUQ
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{746174ea-5f13-4f36-ba15-e99bd40601ae}
FXGP:DP-5K7DUUQ
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{b4b40499-6641-495c-ba4f-736882a98f36}
FXGP:DP-5K7DUUQ
FXData:

</EFOFEX>

**Notes**

300+ variations.

**Question**

Calculate the area of the shaded shape where the radius of the larger circle (OQ) is <EFOFEX>
id:fxe{3b3b7c36-efb6-48f6-90b1-12fd294c67ee}
FXGP:DP-HU8FSFS
FXData:

</EFOFEX>.

<EFOFEX>
id:fxd{2d285a6b-f01e-4bc3-bbcf-32b7cbb24711}
FXGP:DP-HU8FSFS
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxe{af9b3ce4-24e9-4b59-8139-1d54ccc5390f}
FXGP:DP-HU8FSFS
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{3afd6e76-03a7-4c54-b0a2-6dd582ce7eb8}
FXGP:DP-HU8FSFS
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{066fad77-f657-4d84-8a15-0e5e87a6b3f0}
FXGP:DP-HU8FSFS
FXData:

</EFOFEX>

**Notes**

499 variations.

**Question**

Calculate the area of this shape.

<EFOFEX>
id:fxd{d10223d0-d111-4633-93d1-04bbe65460ea}
FXGP:DP-6ZZQFZ7
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{a42ae02a-4fa8-4f2b-afe4-7cdca596233b}
FXGP:DP-6ZZQFZ7
FXData:

</EFOFEX>

A(shape) = A(rectangle) + A(trapezium) – A(square)

**Rectangle**

<EFOFEX>
id:fxe{a8da6fe6-5dcf-4154-adc2-531f109f1f9e}
FXGP:DP-6ZZQFZ7
FXData:

</EFOFEX>

**Square**

<EFOFEX>
id:fxe{77a46334-de0d-4127-a75c-cd242d49bd26}
FXGP:DP-6ZZQFZ7
FXData:

</EFOFEX>

**Trapezium**

<EFOFEX>
id:fxe{d2497903-c083-4d44-8323-a1bc8960d836}
FXGP:DP-6ZZQFZ7
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{6f947e39-7929-4564-a3c6-0f1e30aae817}
FXGP:DP-6ZZQFZ7
FXData:

</EFOFEX>

**Notes**

10000+ variations.

**Question**

Find the area of this shape that is defined by quarter circles that have centres and end points that lie on a grid.

<EFOFEX>
id:fxd{e8f22e01-e77c-45a0-a6d3-79a12265facb}
FXGP:DP-JVW8RC8
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{111bc55a-7e2b-4111-bdf4-fd50ed8561dc}
FXGP:DP-JVW8RC8
FXData:

</EFOFEX><EFOFEX>
id:fxd{cd975685-eea4-4a02-8801-add9227e8c82}
FXGP:DP-JVW8RC8
FXData:

</EFOFEX><EFOFEX>
id:fxe{3ac4fc8b-c00e-4dfe-a1ef-8fbc4ea05a00}
FXGP:
FXData:
</EFOFEX>

There are many ways of dissecting this area, all of which are equally valid. Any valid approach should be awarded full marks.

<EFOFEX>
id:fxe{dddc6e54-9b24-4367-a3f9-385198d87499}
FXGP:DP-JVW8RC8
FXData:

</EFOFEX>

**Notes**

11 variations.

**Question**

Find the area of this teardrop shape where the <EFOFEX>
id:fxe{16f56bdd-1e2e-4a48-a4de-4b5eb3a6951a}
FXGP:DP-RUEYWKT
FXData:

</EFOFEX> side is tangential to the circular arc.

<EFOFEX>
id:fxd{54b39c83-c8d7-4da0-932f-d1491cb7d26b}
FXGP:DP-RUEYWKT
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{218f994a-1f60-4acc-bdce-2288dddf04b3}
FXGP:DP-RUEYWKT
FXData:

</EFOFEX>

**<EFOFEX>
id:fxe{dfabb71f-1019-43b9-8ac1-6654f3c1bb9e}
FXGP:DP-RUEYWKT
FXData:

</EFOFEX>**

**Notes**

582 variations.

**Question**

A contractor needs to lay a large concrete slab as shown below. Calculate the area of the slab.

<EFOFEX>
id:fxd{f69fc028-21ae-4bc7-b659-8b3f464dfa03}
FXGP:DP-datEje3
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{d738c3cf-6b9f-4d44-b30c-2d610add5cf8}
FXGP:DP-datEje3
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{a3fcd10c-4ef2-40bd-b259-96dcaed32007}
FXGP:DP-datEje3
FXData:

</EFOFEX>

**Notes**

39 variations.

**Question**

Calculate the area of the shape shown below.

<EFOFEX>
id:fxd{861d2a17-c9f3-42be-b33d-3f0e925a4216}
FXGP:DP-gr7xaWf
FXData:
</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{f33f62cd-c918-4f26-8dc1-656ec8f53b66}
FXGP:DP-gr7xaWf
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{04d5193c-4421-40c5-b2a4-75cc2e37586a}
FXGP:DP-gr7xaWf
FXData:

</EFOFEX>

**Notes**

330 variations.

**Question**

A local community group is building bird nesting boxes and the end of the box has the shape shown below.

<EFOFEX>
id:fxd{8973db3f-2912-4df1-80e0-3ac0daa52e44}
FXGP:DP-CcSVr7s
FXData:

</EFOFEX>

Calculate the area of the shape so that the community group can order the correct amount of paint.

**Solution**

<EFOFEX>
id:fxd{b1985486-add0-4d0d-ba49-9fc70a301915}
FXGP:DP-CcSVr7s
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{dfdae7e6-e235-4960-9497-f2aa70291ee9}
FXGP:DP-CcSVr7s
FXData:

</EFOFEX>

**Notes**

2000+ variations.

**Question**

Find the area of this shape.

<EFOFEX>
id:fxd{501ba46e-694a-4005-a29f-51e8221a538e}
FXGP:DP-uJDhbRq
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{ce6bb3b2-7cba-487d-99fa-bd1a5556b5a1}
FXGP:DP-uJDhbRq
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{16d3618e-24d8-4b73-a9ef-8a44e5c2b9bf}
FXGP:DP-uJDhbRq
FXData:

</EFOFEX>

**Notes**

40 variations.

**Question**

<EFOFEX>
id:fxe{f9d3134c-8623-40f5-9a3e-183b1386ed26}
FXGP:DP-YWMeNdW
FXData:

</EFOFEX>

<EFOFEX>
id:fxd{5bc2dad8-d3f4-4717-9b37-3d873c7e0160}
FXGP:DP-YWMeNdW
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{ab990b1e-3837-4572-a9cb-98fd4c3014bd}
FXGP:DP-YWMeNdW
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{89237820-61f0-4a4f-8953-48538e1cd6a9}
FXGP:DP-YWMeNdW
FXData:

</EFOFEX>

**Notes**

700+ variations.

**Question**

Calculate the area of this shape.

<EFOFEX>
id:fxd{7b5679b2-753f-4d5b-8c5e-d085013dc065}
FXGP:DP-FSedQQQ
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxd{6acfb050-9a1e-46c1-ac1a-a4c6e3ca517d}
FXGP:DP-FSedQQQ
FXData:

</EFOFEX>

<EFOFEX>
id:fxe{6341313f-bacb-4eb5-b991-4f34b1b785a0}
FXGP:DP-FSedQQQ
FXData:

</EFOFEX>

**Notes**

2000+ variations.