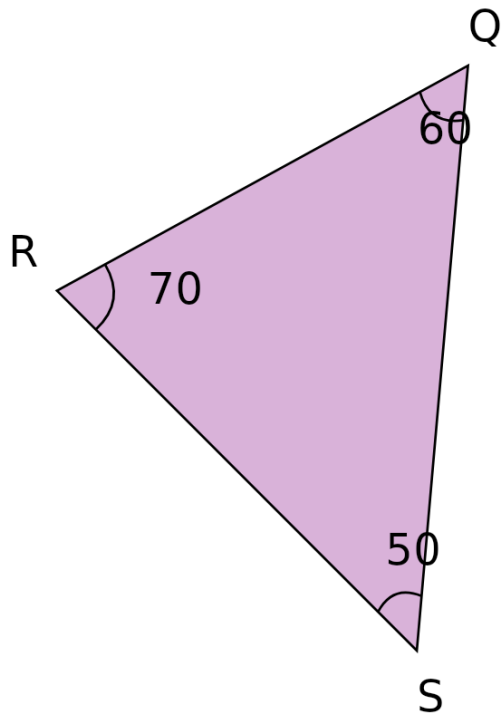


Geometry - Intermediate - Intro

1 What is the measurement of angle $\angle RSQ$?



A

 50°

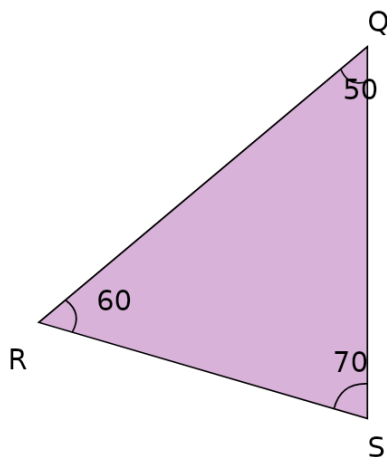
B

 70°

C

 60°

2 The angle that is 70° would be called what?



A

 $\angle QRS$

B

 $\angle SRQ$

C

 $\angle QSR$

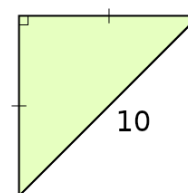
D

 $\angle RQS$

E

 $\angle SQR$

3 Find the length of the identical leg sides, given a hypotenuse of length 10



Side = ?

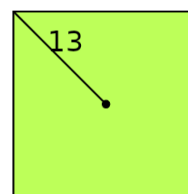
A

7.07

B

8.49

4 Find the length of the square sides, given a diagonal to the center of length 13



Side = ?

A

 $2 \cdot \sqrt{\frac{13^2}{\sqrt{2}}}$

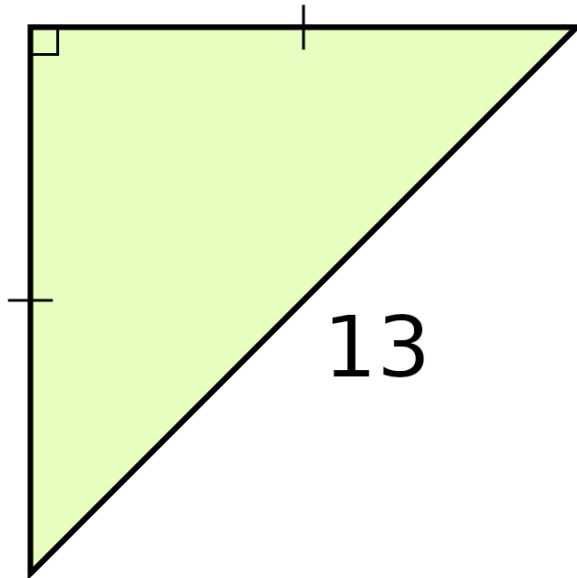
B

 $2 \cdot \sqrt{\frac{13^2}{2}}$



Geometry - Intermediate - Intro

- 5 Find the length of the identical leg sides, given a hypotenuse of length 13



Side = ?

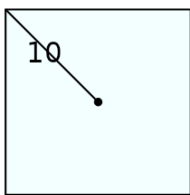
A

$$2 \cdot \sqrt{\frac{13^2}{2}}$$

B

$$\sqrt{\frac{13^2}{2}}$$

- 6 Find the length of the square sides, given a diagonal to the center of length 10



Side = ?

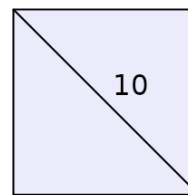
A

14.14

B

8.49

- 7 Find the length of the square sides, given a diagonal of length 10



Side = ?

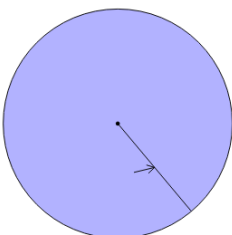
A

9.19

B

7.07

- 8 In geometry a line from the center to the edge is called what?



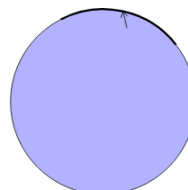
A

radius

B

revelry

- 9 Is the part of the circle identified by the arrow a 'diameter' (a line from edge to edge that goes through the center)?



A

It is not a diameter

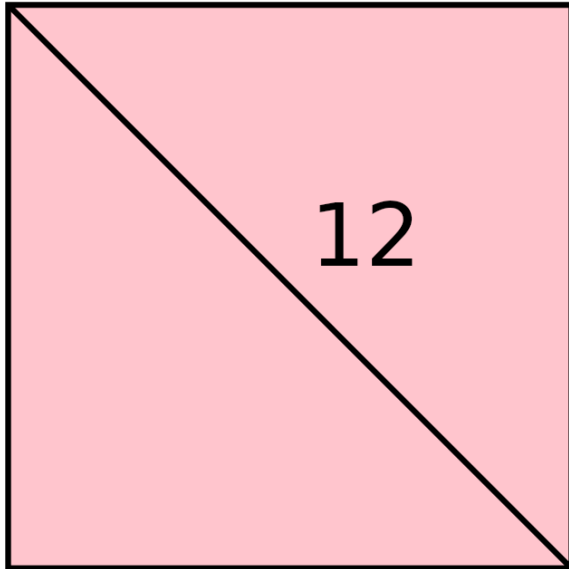
B

It is a diameter



Geometry - Intermediate - Intro

10 Find the length of the square sides, given a diagonal of length 12



Side = ?

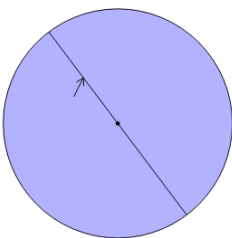
A

$$2 \cdot \sqrt{\frac{12^2}{2}}$$

B

$$\sqrt{\frac{12^2}{2}}$$

11 Is the part of the circle identified by the arrow a 'tangent'?



A

It is not a tangent

B

It is a tangent

12 Name the part of the circle identified by the arrow



A

chord

B

tangent

C

sector

D

diameter

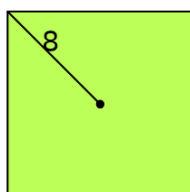
E

circumference

F

arc

13 Find the area of the square, given a diagonal to the center of length 8



Area = ?

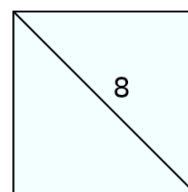
A

128

B

115.2

14 Find the area of the square, given a diagonal of length 8



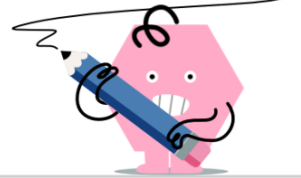
Area = ?

A

32

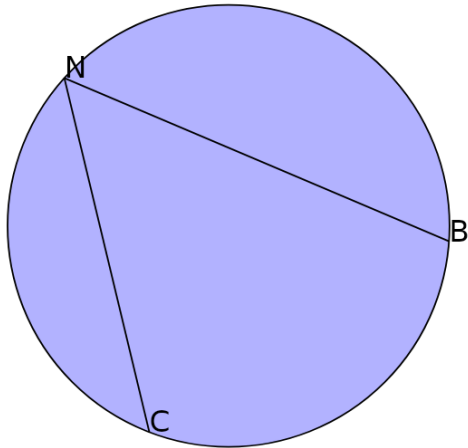
B

25.6



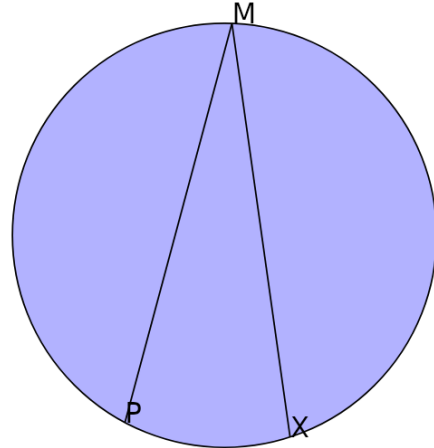
Geometry - Intermediate - Intro

15 What angle is subtended by arc BC?



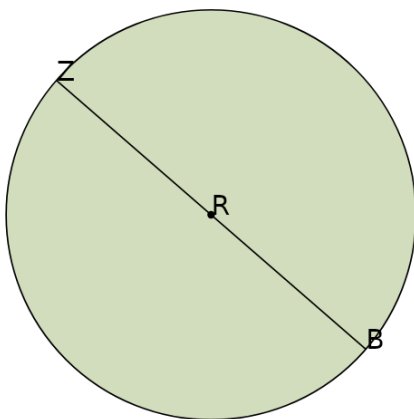
- | | | |
|----------|----------|----------|
| A
NBC | B
NCB | C
CBN |
| D
BCN | E
BNC | |

16 What arc subtends angle XMP?



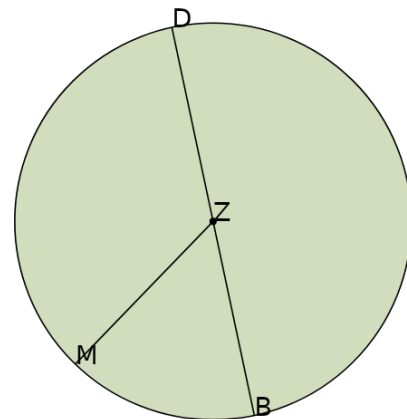
- | | | |
|---------|---------|---------|
| A
XM | B
MP | C
PM |
| D
XP | E
MX | |

17 What is known about diameter ZRB given radius RB

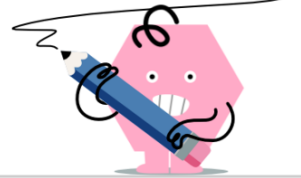


- | | | |
|----------------------------|----------------------------|--|
| A
ZRB is twice RB | B
ZRB and RB add to 90 | C
ZRB and RB add to 360 |
| D
ZRB is the same as RB | E
ZRB and RB add to 180 | F
Nothing, ZRB and RB are not related |

18 What is known about diameter DZB given radius ZM

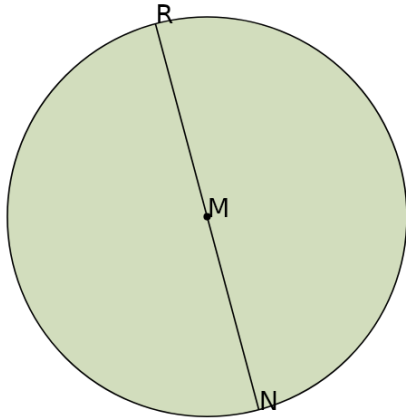


- | | | |
|--|----------------------------|----------------------------|
| A
DZB and ZM add to 360 | B
DZB is the same as ZM | C
DZB and ZM add to 180 |
| D
Nothing, DZB and ZM are not related | E
DZB is half of ZM | F
DZB is twice ZM |



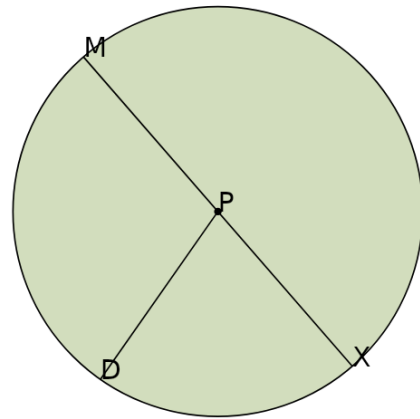
Geometry - Intermediate - Intro

19 What is known about radius MN given diameter RMN



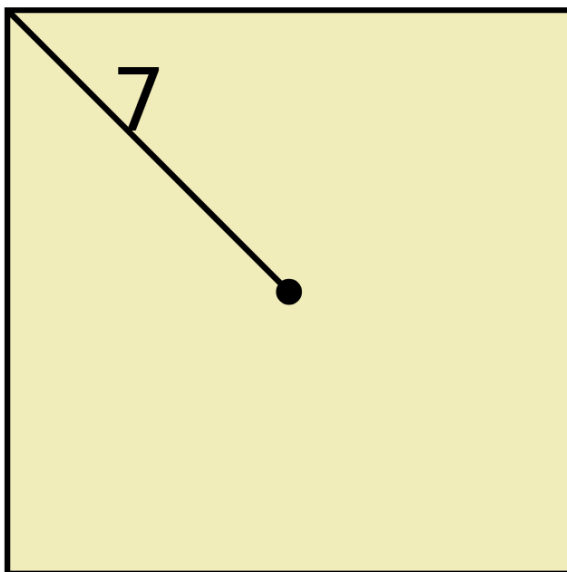
- | | | |
|-------------------------|---------------------------------------|------------------------|
| A MN and RMN add to 360 | B MN is the same as RMN | C MN is half of RMN |
| D MN is twice RMN | E Nothing, MN and RMN are not related | F MN and RMN add to 90 |

20 What is known about radius PD given diameter MPX



- | | | |
|---------------------------------------|-------------------------|-------------------------|
| A Nothing, PD and MPX are not related | B PD is the same as MPX | C PD is half of MPX |
| D PD and MPX add to 90 | E PD is twice MPX | F PD and MPX add to 360 |

21 Find the area of the square, given a diagonal to the center of length 7



Area = ?

A

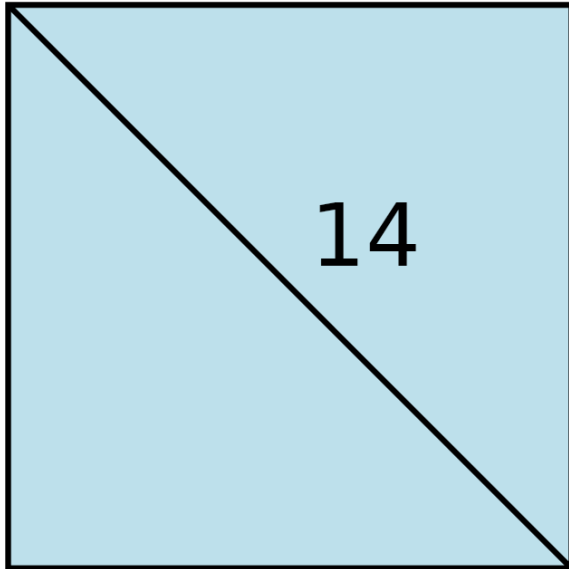
$$4 \cdot \sqrt{\frac{7^2}{\sqrt{2}}}$$

B

$$2 \cdot 7^2$$

**Geometry - Intermediate - Intro**

22 Find the area of the square, given a diagonal of length 14



Area = ?

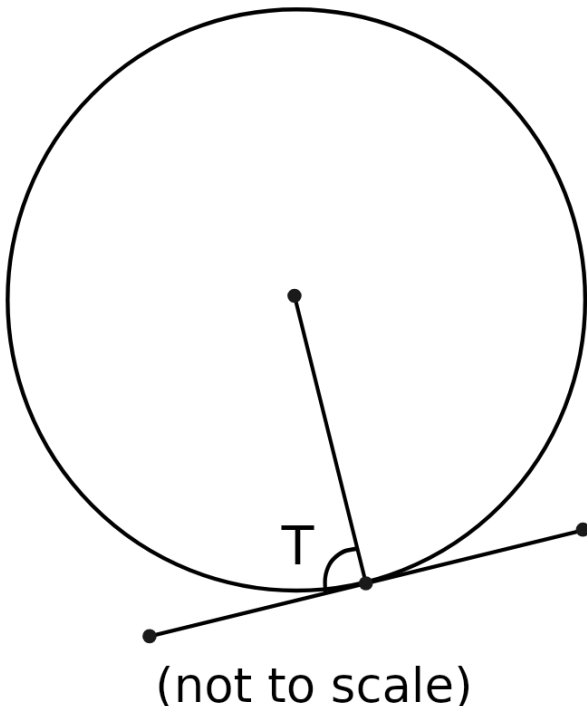
A

$$\frac{14^2}{2}$$

B

$$\frac{14^2}{\sqrt{2}}$$

23 What geometry rule would help find angle T?



A

Angle T will always be 180°

B

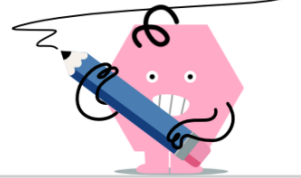
Angle T will always be 90°

C

Angle T will always be 60°

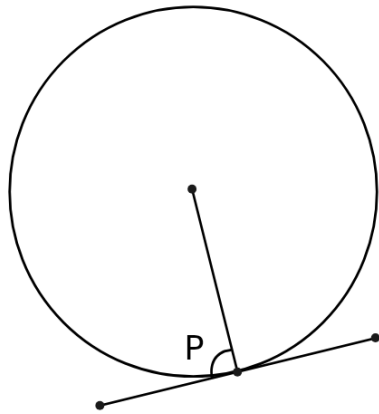
D

Angle T will always be 45°



Geometry - Intermediate - Intro

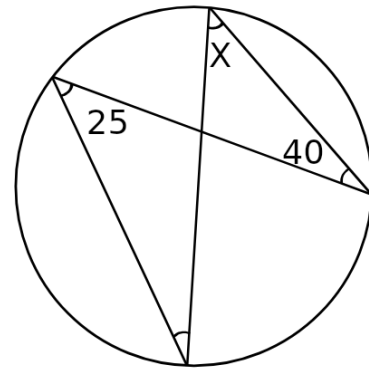
24 What is angle P?



(not to scale)

A 80	B 90	C 65
D 70	E 110	

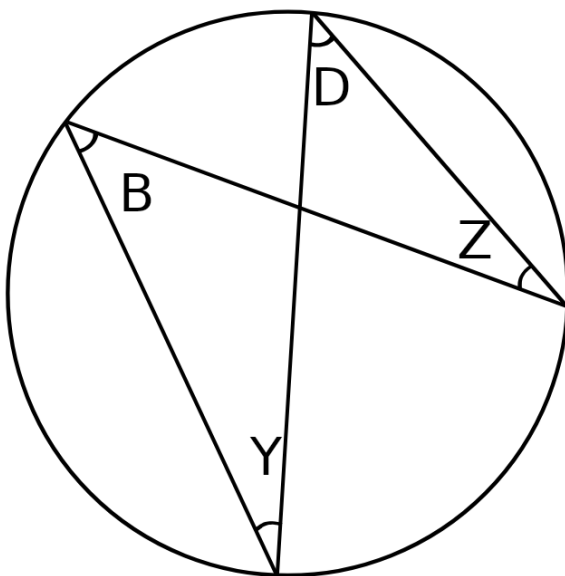
25 What is angle X?



(not to scale)

A 40	B 25	C 30
D 10	E 45	F 50

26 What geometry rule would help find angle Y?

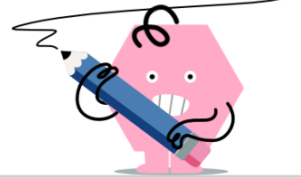


(not to scale)

A
Angle Y will be identical to D because they subtend the same arc

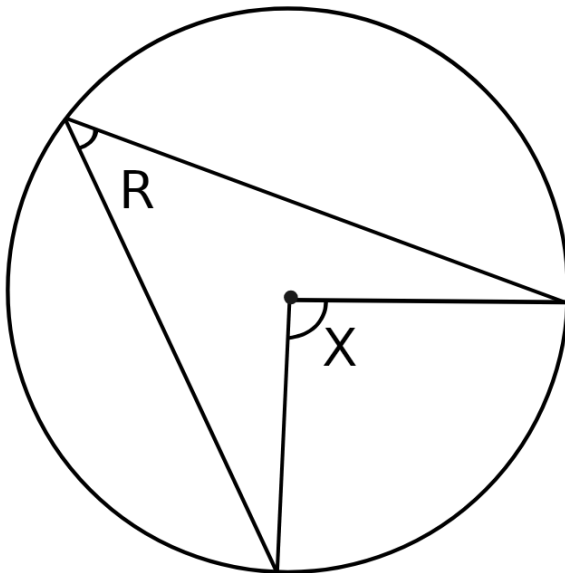
B
Angles Y and Z will add to 180°

C
Angle Y will be identical to Z because they subtend the same arc



Geometry - Intermediate - Intro

27 What geometry rule would help find angle R?



(not to scale)

A

Angles R and X will add to 180°

B

Angle X will be twice R

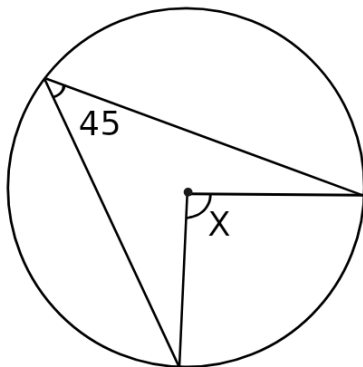
C

Angle R will be twice X

D

Angle R will be identical to X because they subtend the same arc

28 What is angle X?



(not to scale)

A

100

B

65

C

115

D

90

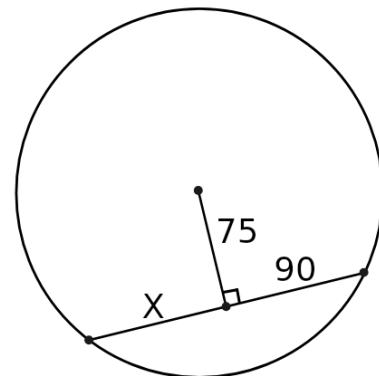
E

110

F

95

29 What is the length of X?



(not to scale)

A

180

B

90

C

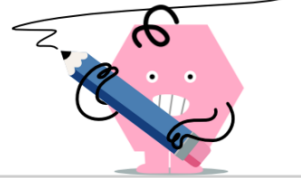
150

D

75

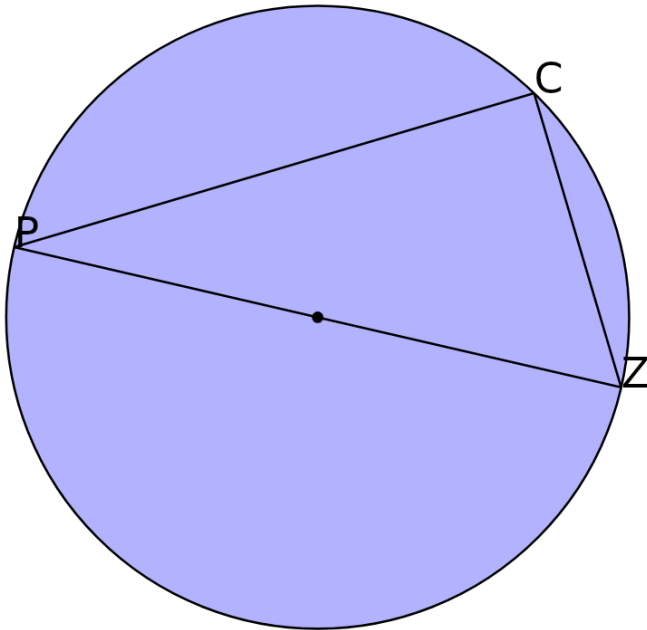
E

15



Geometry - Intermediate - Intro

30 What is known about angle ZCP given that ZP forms a diameter?



A

ZCP is always 180°

B

ZCP is always 45°

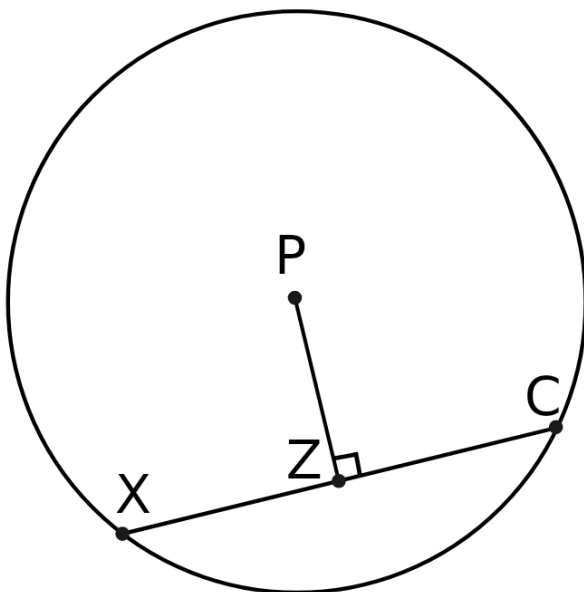
C

ZCP is always 90°

D

ZCP is always 60°

31 What geometry rule would help find length XZ?



(not to scale)

A

Length XZ will be twice ZC

B

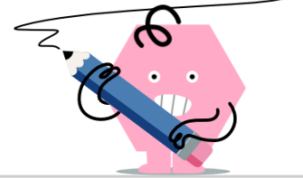
Length XC will be identical to ZP

C

Length XC will be twice ZP

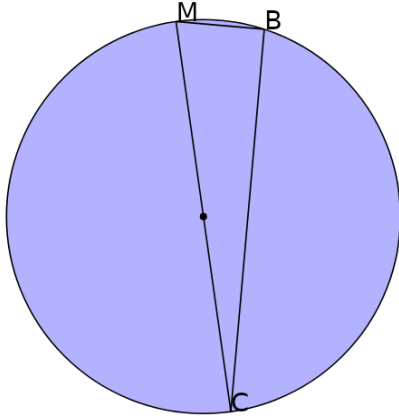
D

Length XZ will be identical to ZC



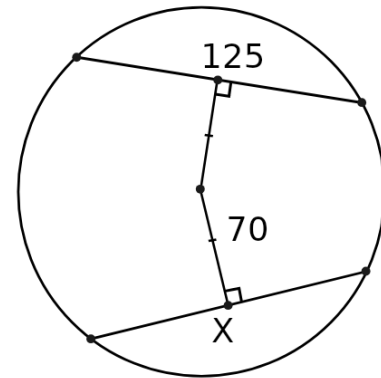
Geometry - Intermediate - Intro

32 Find angle CBM in degrees given that CM forms a diameter



- | | | |
|----------|-----------|-----------|
| A
75° | B
90° | C
45° |
| D
15° | E
105° | F
120° |

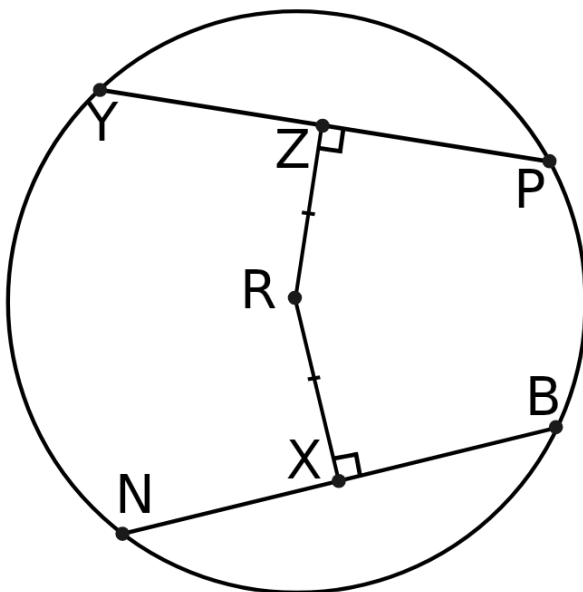
33 What is the length of X?



(not to scale)

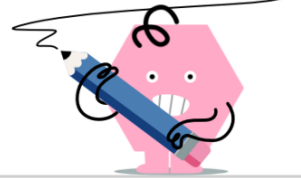
- | | | |
|----------|----------|----------|
| A
55 | B
70 | C
125 |
| D
250 | E
140 | |

34 What geometry rule would help find length NB?



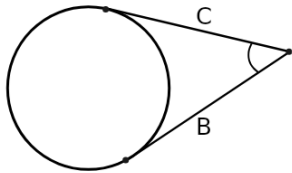
(not to scale)

- | |
|--|
| A
Length NB will be identical to YP |
| B
Length NB will be identical to RZ |
| C
Length NB will be twice YP |
| D
Length NB will be twice RZ |



Geometry - Intermediate - Intro

35 What geometry rule would help find length B?



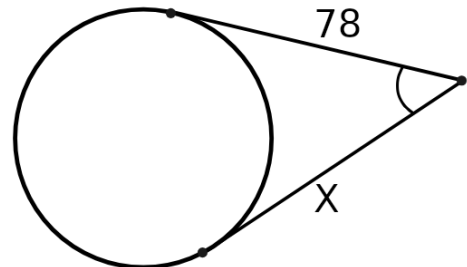
(not to scale)

A Length C is twice B

B Length C is half B

C Lengths C and B are the same

36 What is the length of X?



(not to scale)

A 78	B 79	C 83
D 81	E 73	F 77

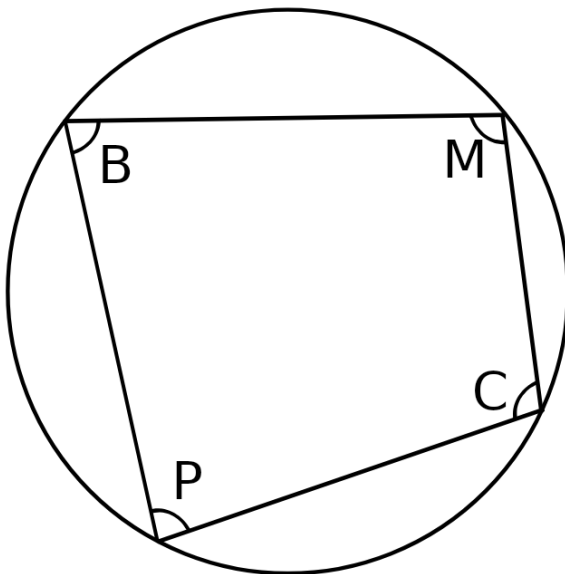
37 A shape is rotated 90° counter-clockwise about the origin. Which coordinate rule describes this rotation?

A $(x, y) \rightarrow (-y, x)$

B $(x, y) \rightarrow (y, -x)$

C $(x, y) \rightarrow (-x, -y)$

38 What geometry rule would help find angle C?



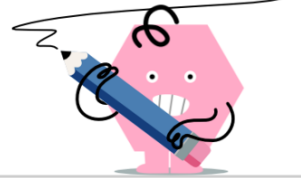
(not to scale)

A Angles B and C add up to 90°

B Angles B and C add up to 180°

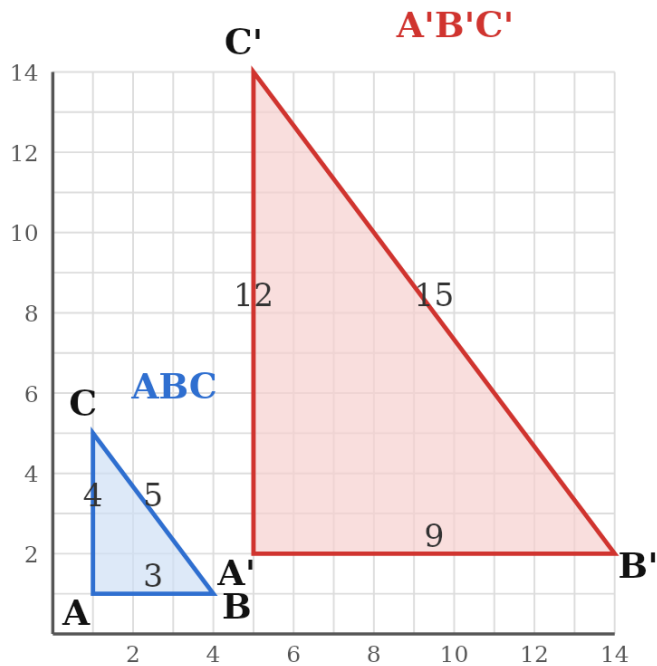
C Angles B and C are identical

D Angles B and M add up to 180°



Geometry - Intermediate - Intro

39 Is the dilation from triangle ABC to triangle A'B'C' a reduction or an enlargement?



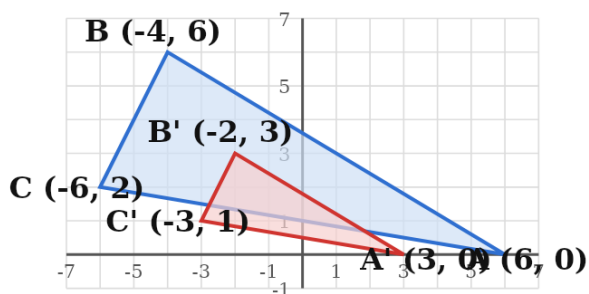
A

Enlargement

B

Reduction

40 What is the scale factor of the dilation from triangle ABC to triangle A'B'C'?



A

3

B

2

C

1/2

D

1/3

41 A rotation about the origin uses the coordinate rule $(x, y) \rightarrow (y, -x)$. Which rotation does this represent?

A

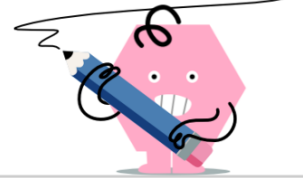
90° counter-clockwise

B

180°

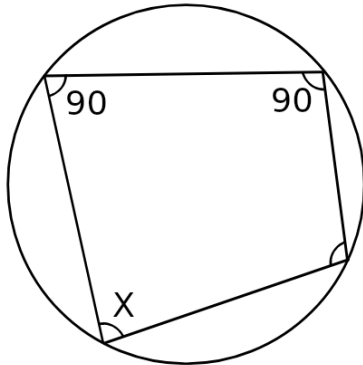
C

270° counter-clockwise



Geometry - Intermediate - Intro

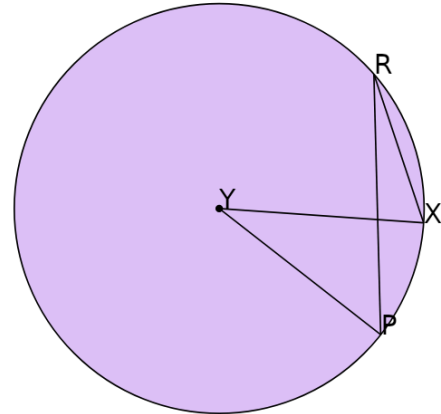
42 What is angle X?



(not to scale)

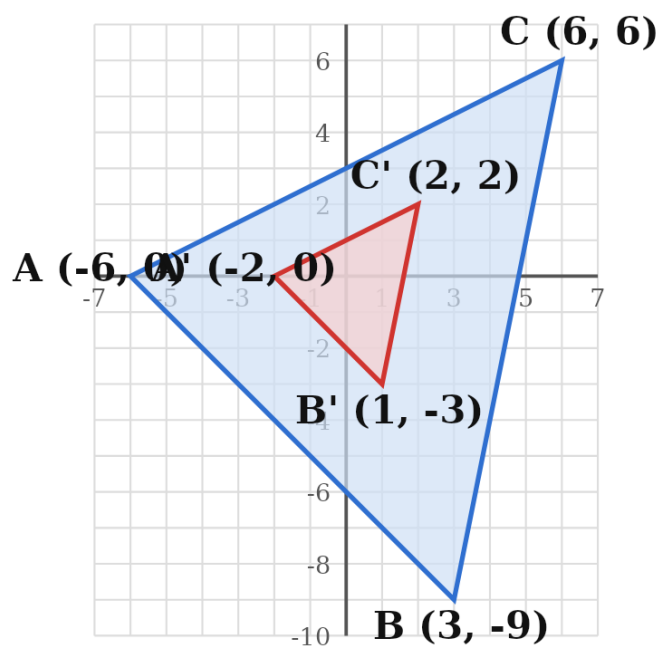
A 75	B 65	C 80
D 90	E 95	F 70

43 What is known about angle XRP compared to angle XYP?

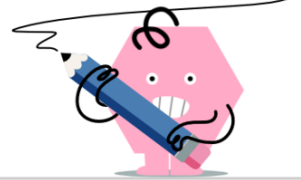


A XRP is twice XYP	B XRP and XYP add to 180°	C XRP is half XYP
D Nothing, XRP and XYP are not subtended by the same arc	E XRP and XYP add to 360°	F XRP is the same as XYP

44 Is the dilation from triangle ABC to triangle A'B'C' a reduction or an enlargement?

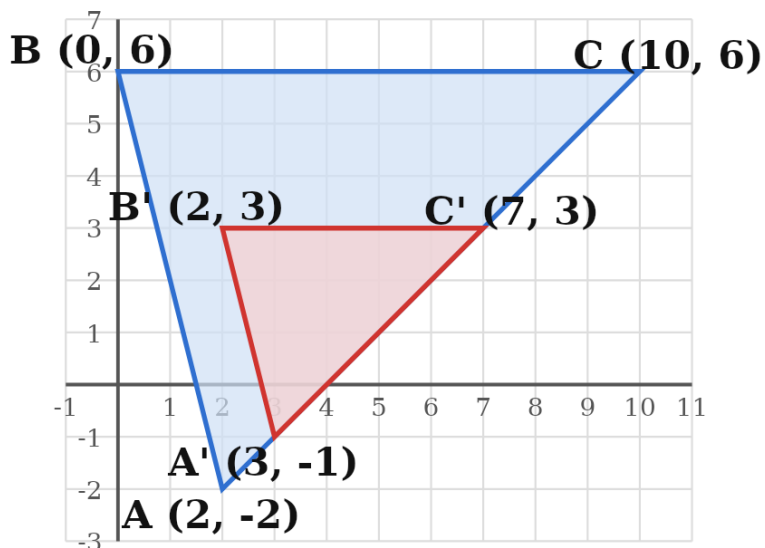


A	Enlargement
B	Reduction



Geometry - Intermediate - Intro

45 What is the scale factor of the dilation from triangle ABC to triangle A'B'C'?



A

1/3

B

2

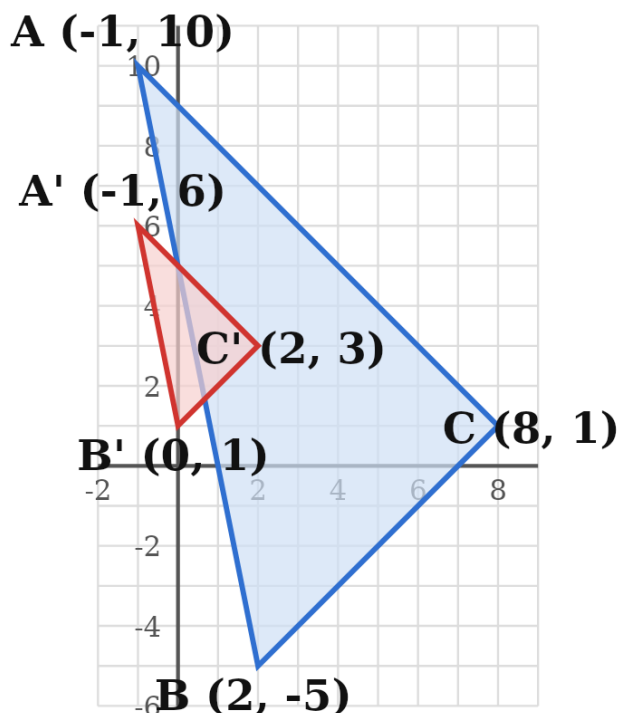
C

3

D

1/2

46 Is the dilation from triangle ABC to triangle A'B'C' a reduction or an enlargement?

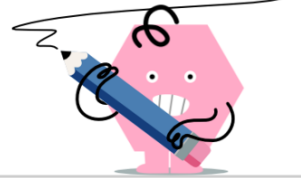


A

Enlargement

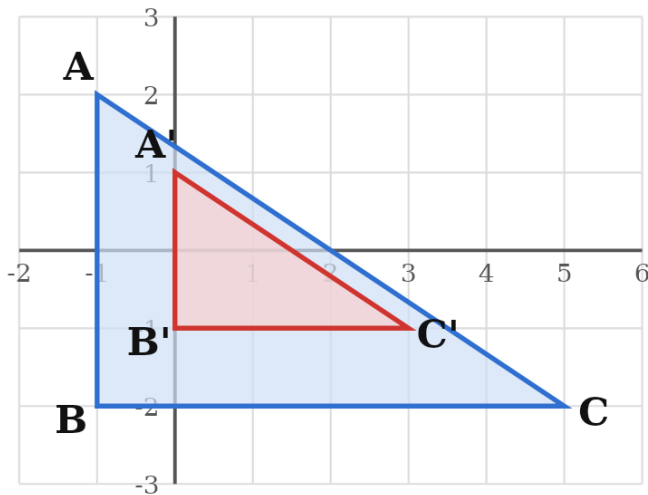
B

Reduction



Geometry - Intermediate - Intro

47 What are the coordinates of the center of dilation that maps triangle ABC to triangle A'B'C'?



A

(0, 3)

B

(-1, 3)

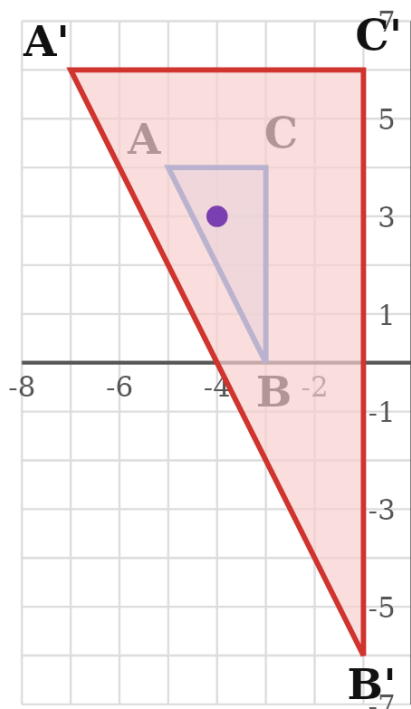
C

(1, 0)

D

(-1, 1)

48 Is the marked point $(-4, 3)$ the center of dilation that maps triangle ABC to triangle A'B'C'?

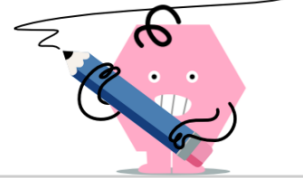


A

No

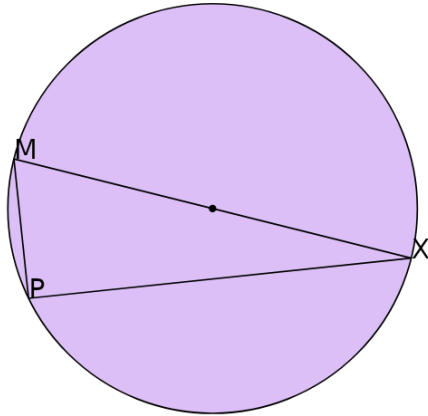
B

Yes



Geometry - Intermediate - Intro

49 What is known about angle PXM and PMX given that XM forms a diameter?



A PXM is the same as PMX

B PXM is half PMX

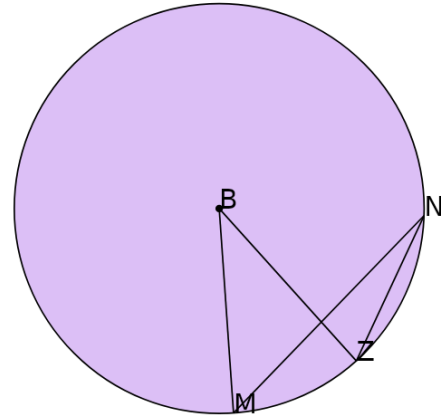
C PXM and PMX add to 180°

D Nothing, PXM and PMX are not subtended by the same arc

E PXM and PMX add to 90°

F PXM and PMX add to 360°

50 What is known about angle ZBM compared to angle ZNM?



A ZBM and ZNM add to 90°

B Nothing, ZBM and ZNM are not subtended by the same arc

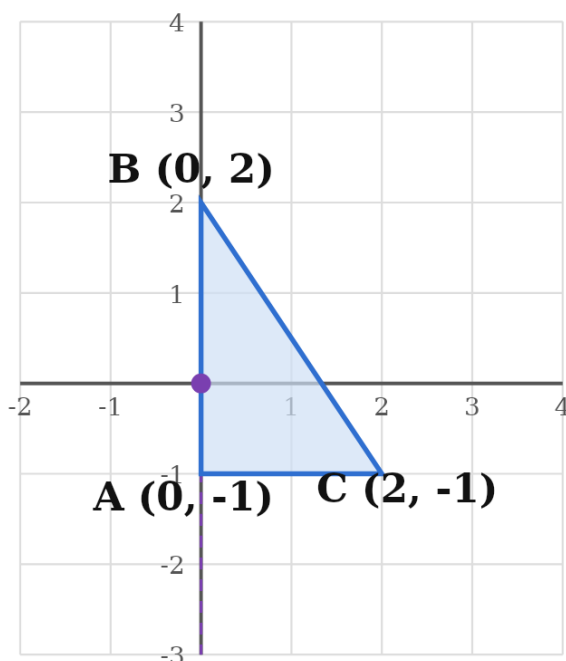
C ZBM and ZNM add to 180°

D ZBM is half ZNM

E ZBM is twice ZNM

F ZBM and ZNM add to 360°

51 Triangle ABC is dilated about the center (0, 0) with a scale factor of 3. What are the coordinates of A', the image of A?



A

(0, -3)

B

(3, -5)

C

(0, -6)

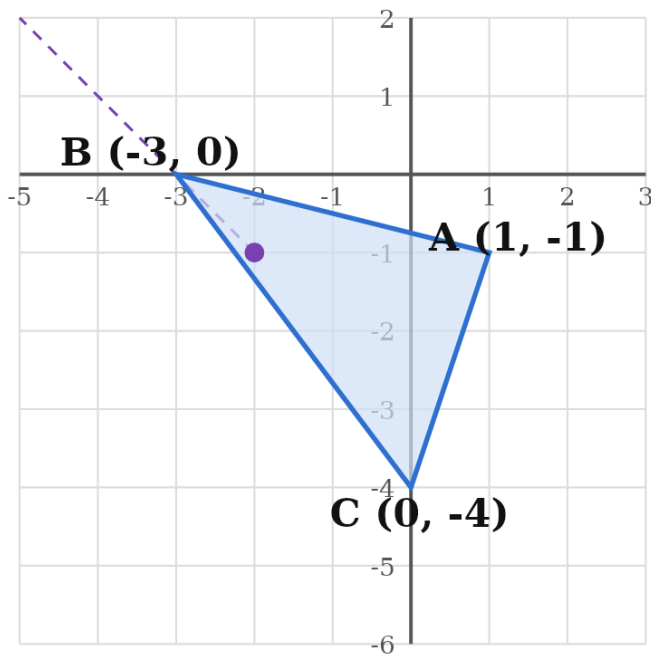
D

(-1, -3)



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52 Triangle ABC is dilated about the center $(-2, -1)$ with a scale factor of 2. What are the coordinates of B' , the image of B?



A

 $(-3, 1)$

B

 $(-4, 1)$

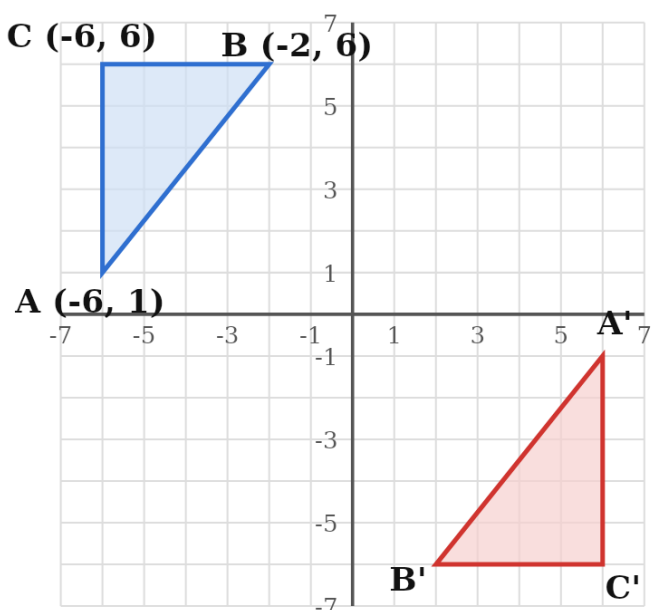
C

 $(-6, 3)$

D

 $(-6, 1)$

53 The triangle ABC is rotated 180° about the origin to give triangle $A'B'C'$. What are the coordinates of C' ?



A

 $(6, 6)$

B

 $(-6, 6)$

C

 $(6, -6)$

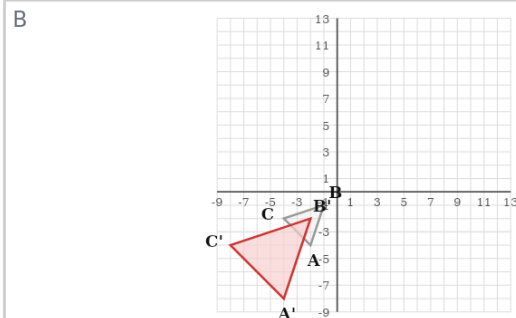
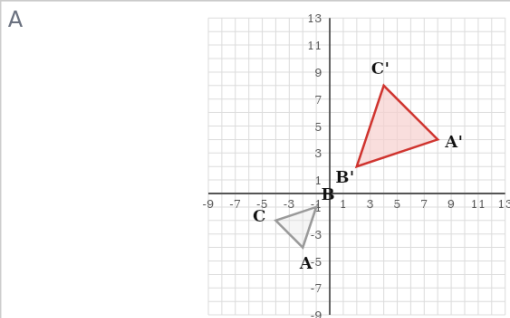
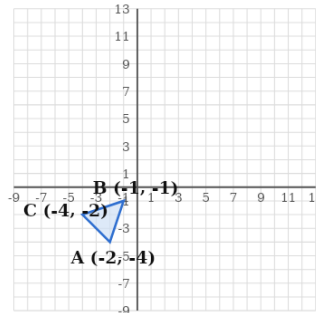
D

 $(-6, -6)$

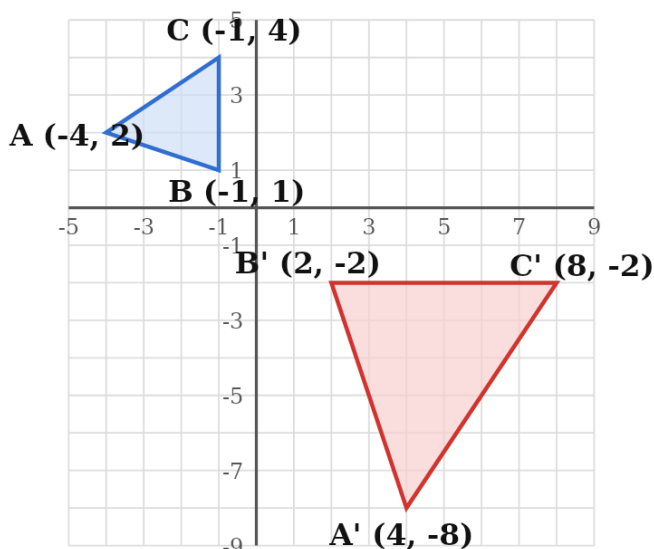


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- 54** The triangle ABC is transformed by two transformations in sequence: (1) reflect across the line $y = -x$; then (2) dilate by a scale factor of 2 about the origin. Which grid shows the final image?



- 55** The triangle ABC (blue) is transformed onto triangle A'B'C' (red) by two transformations applied in sequence. Which pair of transformations was used?

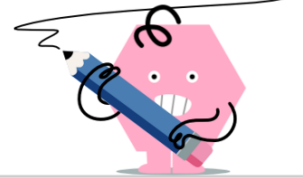


A Dilate by a scale factor of 3 about the origin, then reflect across the line $y = x$.

B Dilate by a scale factor of 2 about the origin, then reflect across the x -axis.

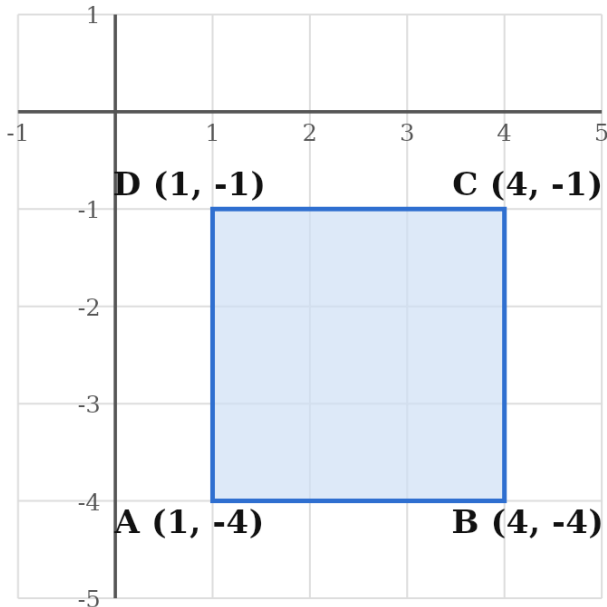
C Translate 3 units right and 2 units down, then reflect across the line $y = x$.

D Dilate by a scale factor of 2 about the origin, then reflect across the line $y = x$.



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- 56** The quadrilateral ABCD is transformed by two transformations in sequence: (1) translate 1 unit right and 2 units down; then (2) rotate 180° about the origin. Is the final image congruent or similar to quadrilateral ABCD?



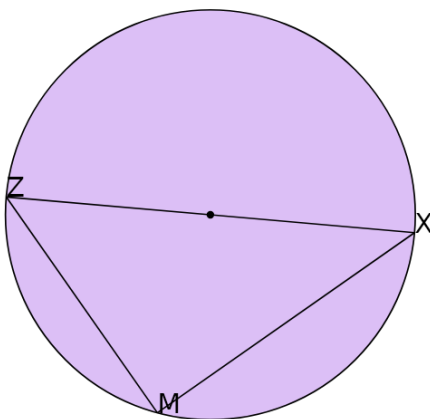
A

Congruent

B

Similar

- 57** Find angle MXZ in degrees given that MZX is 50° and XZ forms a diameter



A

55°

B

20°

C

85°

D

10°

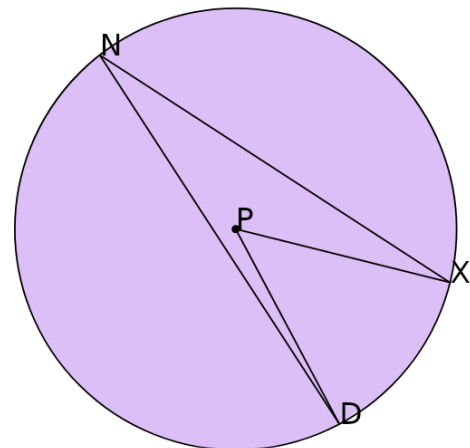
E

40°

F

115°

- 58** Find angle XPD if angle XND is 24°



A

48°

B

23°

C

63°

D

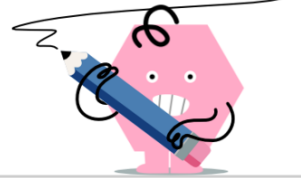
12°

E

38°

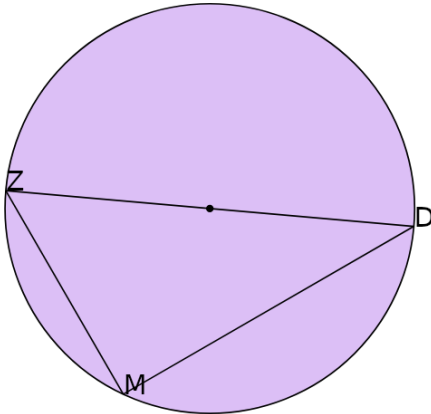
F

33°



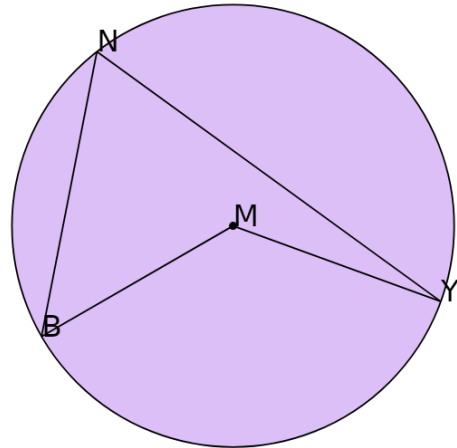
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59 Find angle MDZ in degrees given that MZD is 55° and DZ forms a diameter



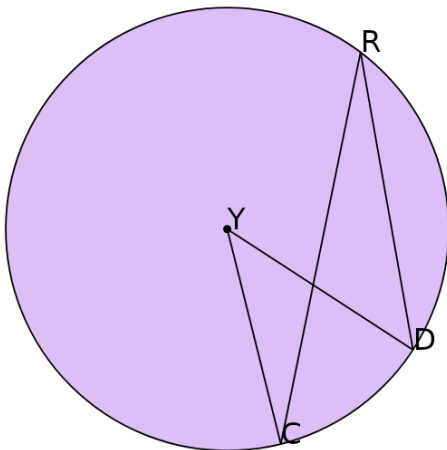
A 50°	B 10°	C 40°
D 125°	E 65°	F 35°

60 Find angle YMB if angle YNB is 65°



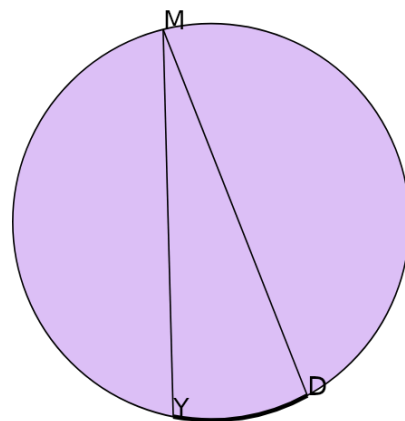
A 115°	B 145°	C 135°
D 130°	E 140°	F 150°

61 Find angle DYC if angle DRC is 21.5°

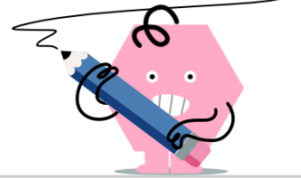


A 28°	B 11°	C 38°
D 18°	E 58°	F 43°

62 What is known about angle DMY compared to the length (in degrees) of intersected arc DY?

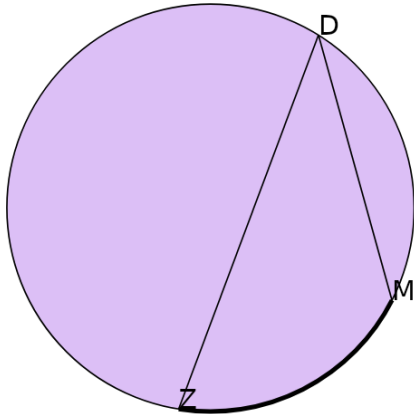


A DY is half DMY	B DMY is half DY	C DY and DMY add to 360°
D Nothing, DY and DMY are not subtended by the same arc	E DY is twice DMY	F DY and DMY add to 180°



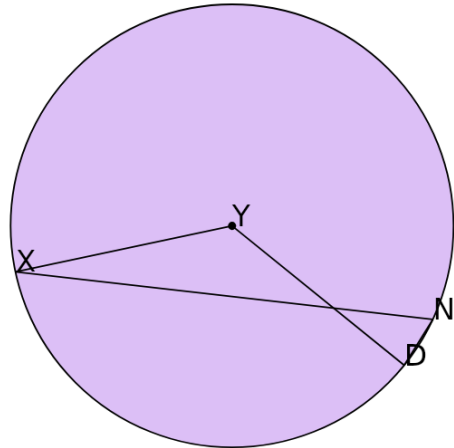
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63 What is known about the length (in degrees) of intersected arc MZ compared to angle MDZ?



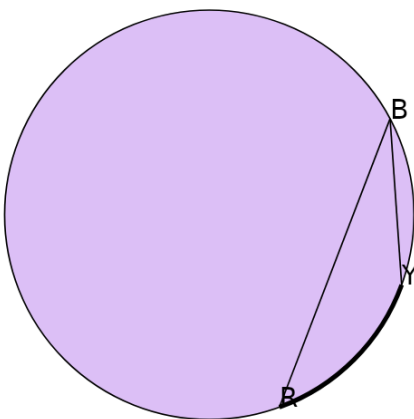
- | | | |
|-------------------------|---------------------------------|---|
| A MZ is half MDZ | B MZ is twice MDZ | C MZ and MDZ add to 180° |
| D MZ is the same as MDZ | E MZ and MDZ add to 360° | F Nothing, MZ and MDZ are not subtended by the same arc |

64 Find angle DYX if angle DNX is 64.5°



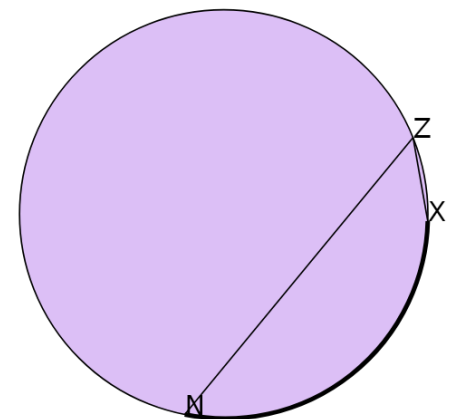
- | | | |
|---------------|---------------|---------------|
| A 149° | B 104° | C 129° |
| D 109° | E 32° | F 139° |

65 Find angle YBR if the intersected arc YR is 50°

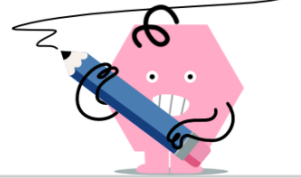


- | | | |
|--------------|---------------|--------------|
| A 40° | B 15° | C 5° |
| D 0° | E 100° | F 25° |

66 Find angle XZN if the intersected arc XN is 99°

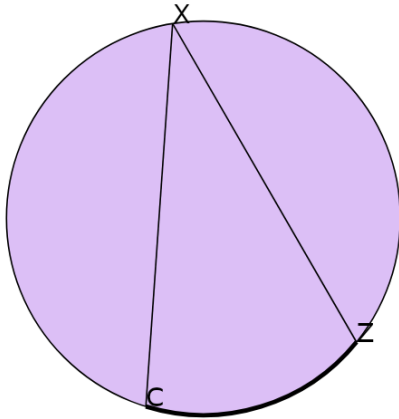


- | | | |
|----------------|----------------|----------------|
| A 198° | B 49.5° | C 39.5° |
| D 69.5° | E 44.5° | F 29.5° |



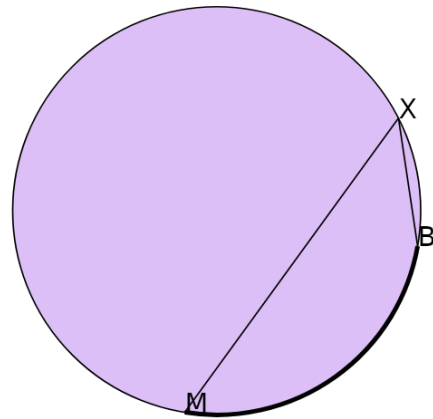
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- 67** Find the length (in degrees) of intersected arc ZC if angle ZXC is 34°



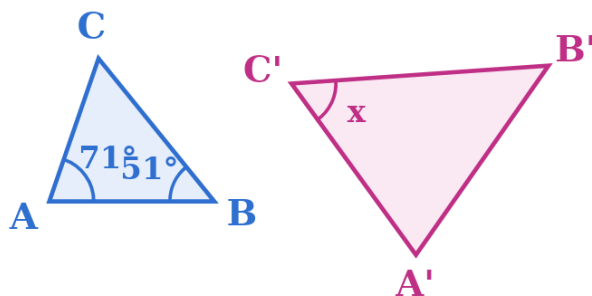
A	53°	B	17°	C	43°
D	78°	E	58°	F	68°

- 68** Find the length (in degrees) of intersected arc BM if angle BXM is 44.5°



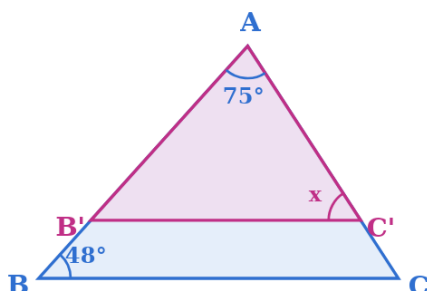
A	74°	B	109°	C	69°
D	22°	E	89°	F	99°

- 69** Triangle ABC is similar to triangle A'B'C'. What is the value of x (in degrees)?

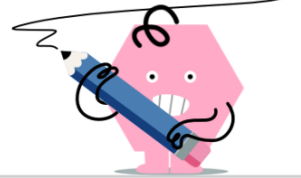


A	122°
B	58°
C	51°
D	71°

- 70** Triangle AB'C' is similar to triangle ABC. What is the value of x (in degrees)?

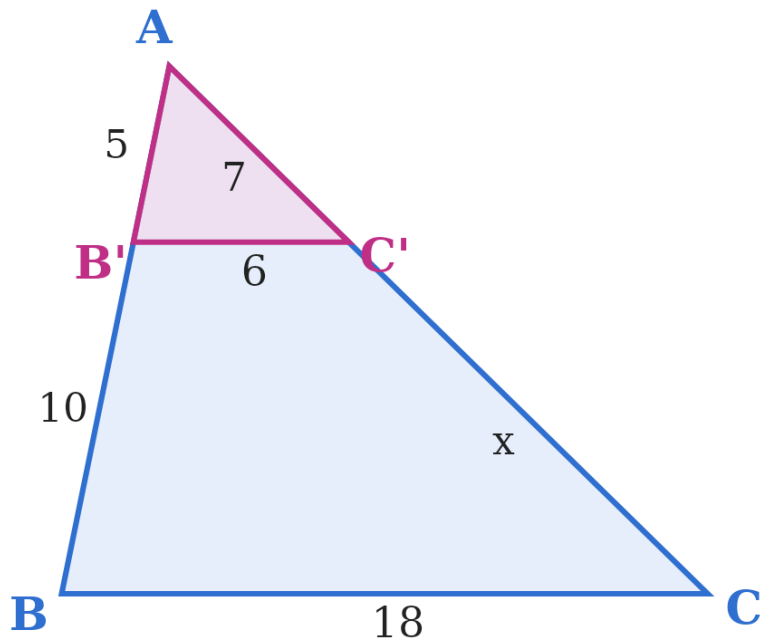


A	48°
B	75°
C	57°
D	123°



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71 Triangle $AB'C'$ is similar to triangle ABC . What is the value of x (in centimetres)?



A

14 cm

B

10 cm

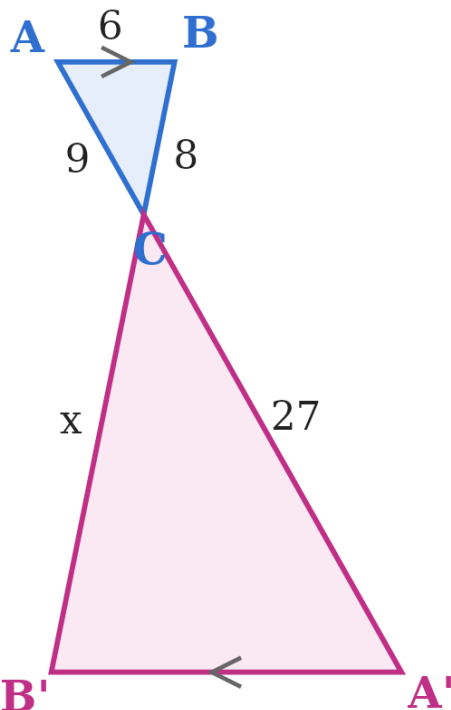
C

12 cm

D

7 cm

72 Triangle ABC is similar to triangle $A'B'C'$. What is the value of x (in centimetres)?



A

3 cm

B

24 cm

C

26 cm

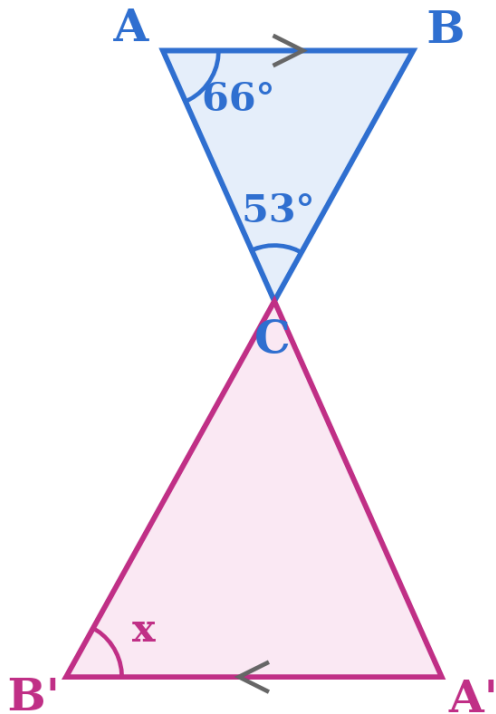
D

8 cm



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73 Triangle ABC is similar to triangle A'B'C'. What is the value of x (in degrees)?



A

61°

B

119°

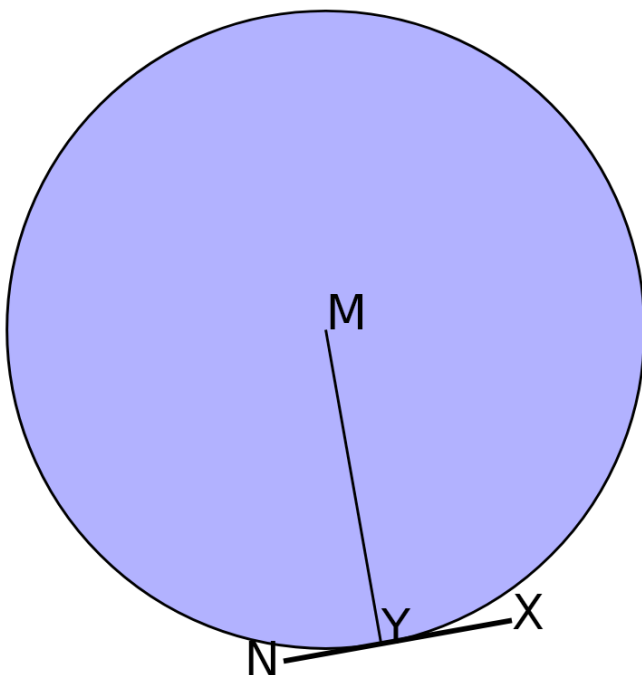
C

53°

D

66°

74 What is known about angle MYN given that XN forms a tangent?



A

MYN is always 90°

B

MYN is always 60°

C

MYN is always 45°

D

MYN is always 180°