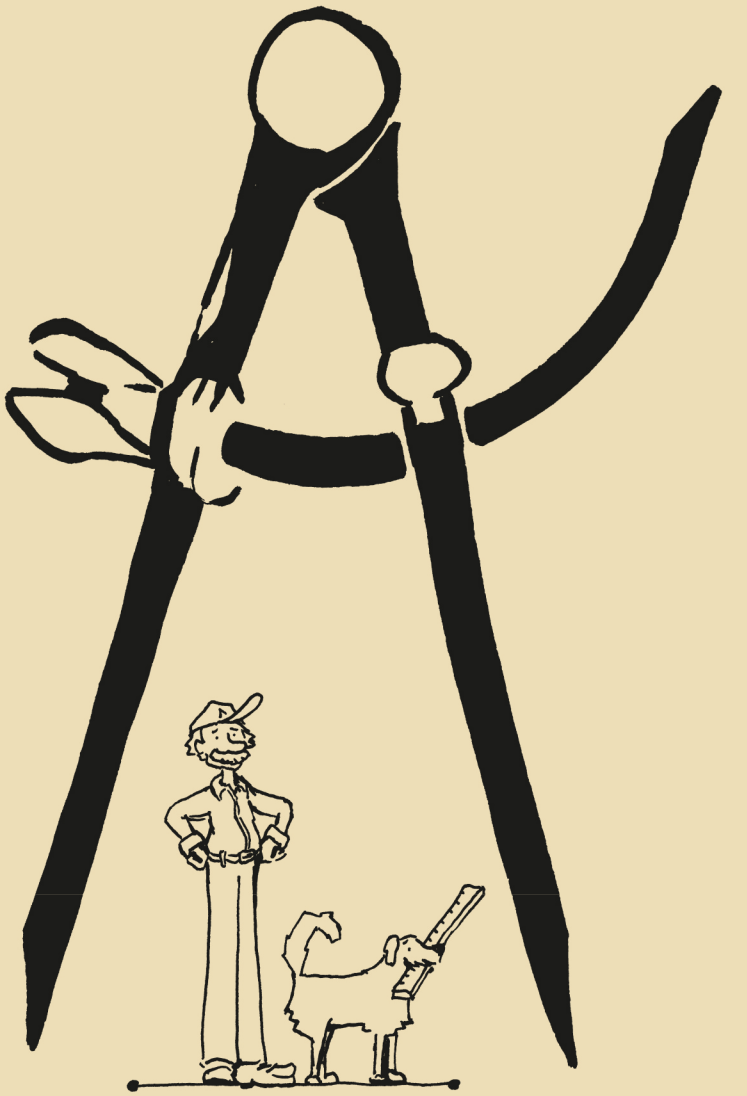
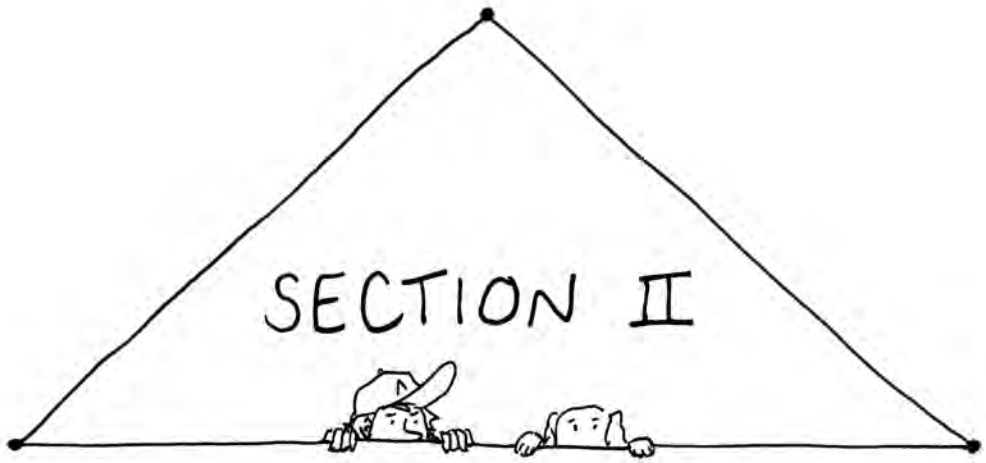


BY HOUND & EYE

A PLAIN & EASY GUIDE TO DESIGNING FURNITURE WITH NO FURTHER TROUBLE

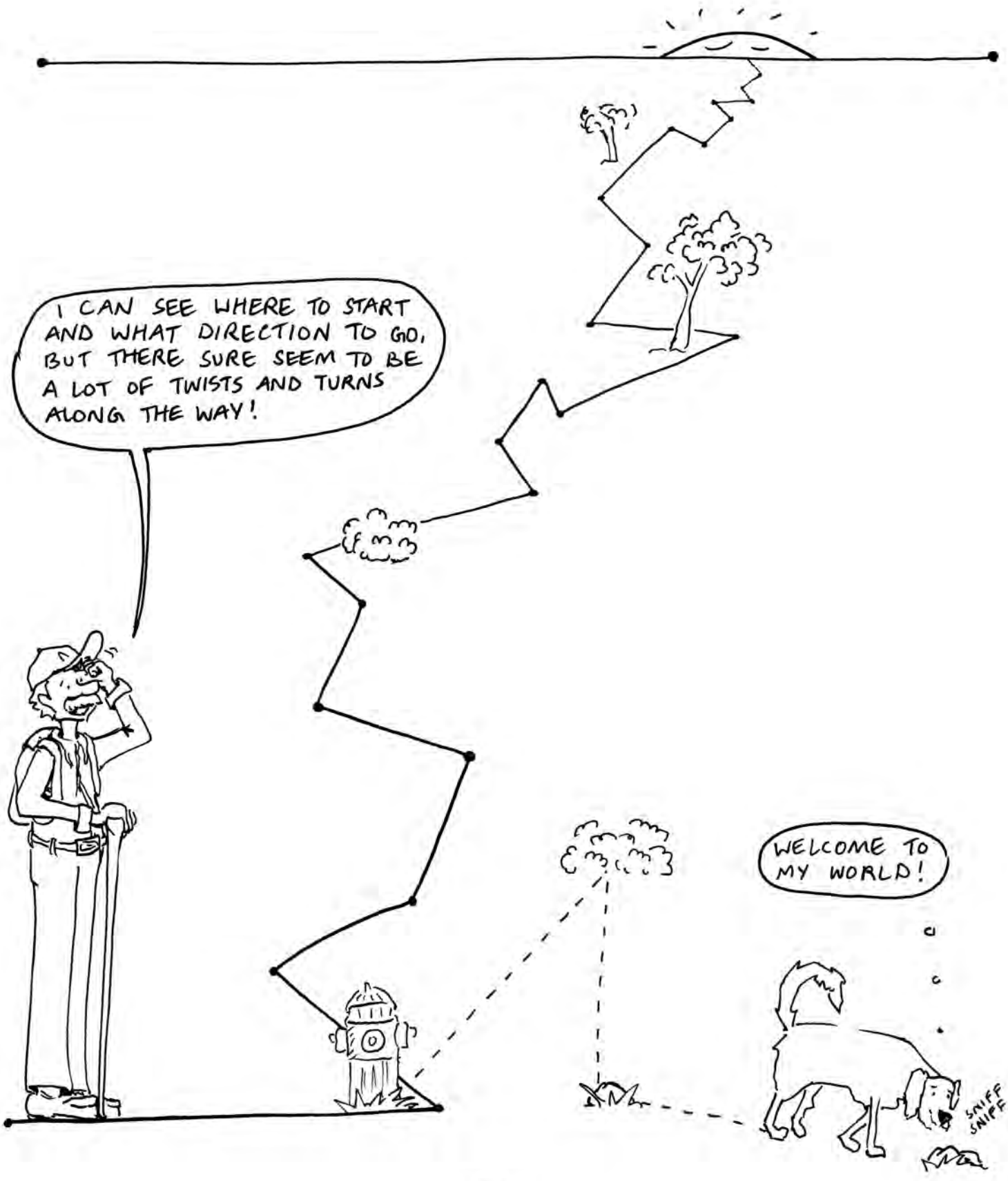
BY GEO. R. WALKER & JIM TOLPIN

ILLUSTRATED BY ANDREA LOVE

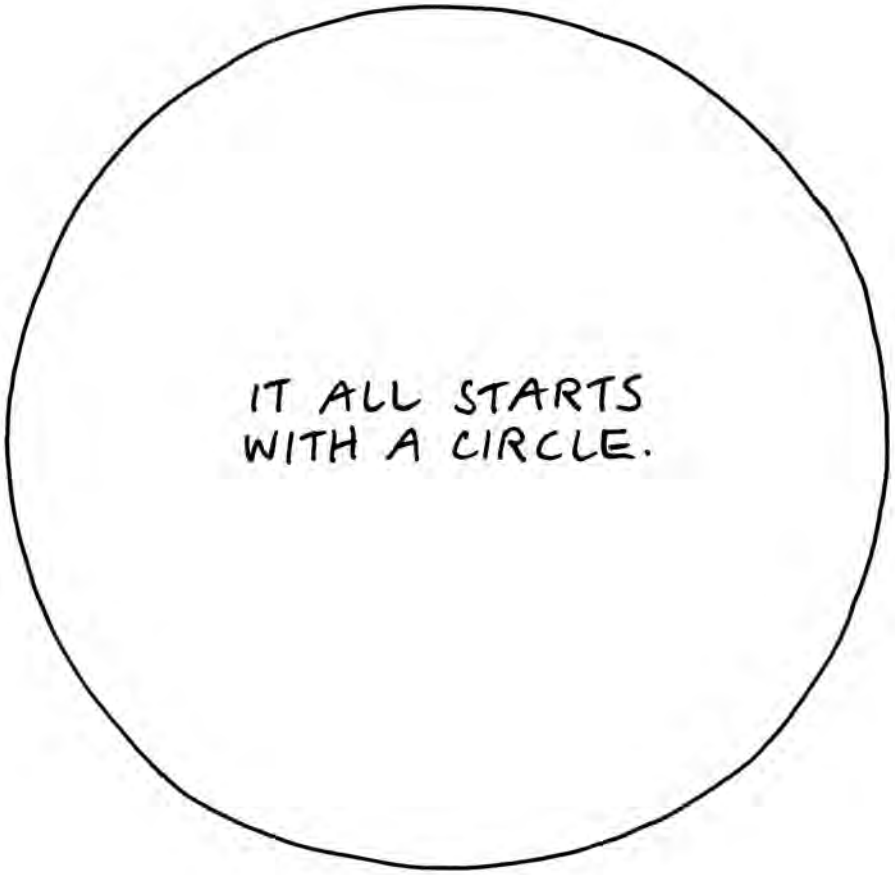


PLANES

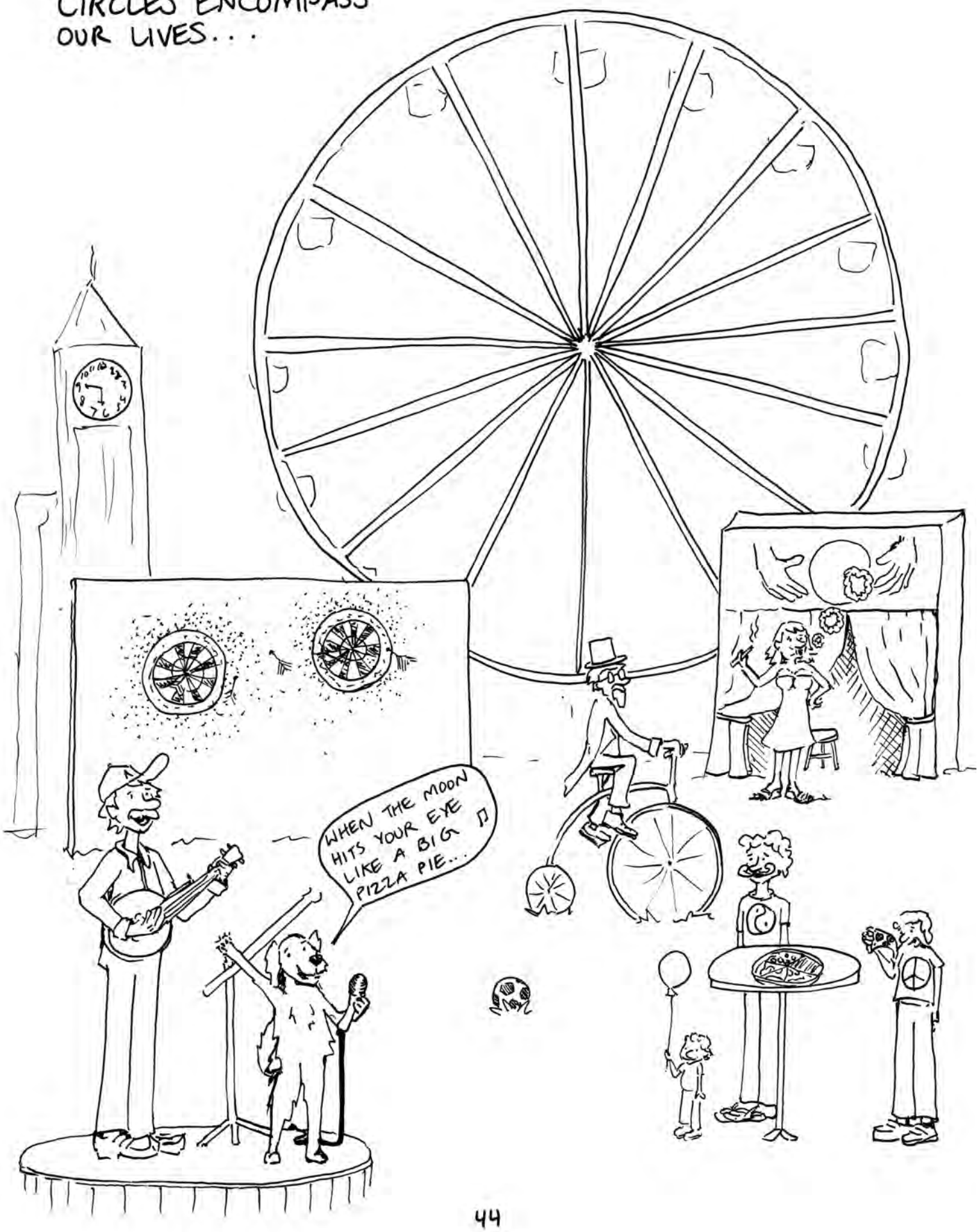
-THE SHAPE OF THINGS TO COME-


I CAN SEE WHERE TO START AND WHAT DIRECTION TO GO, BUT THERE SURE SEEM TO BE A LOT OF TWISTS AND TURNS ALONG THE WAY!
WELCOME TO MY WORLD!
SNIFF SNIFF

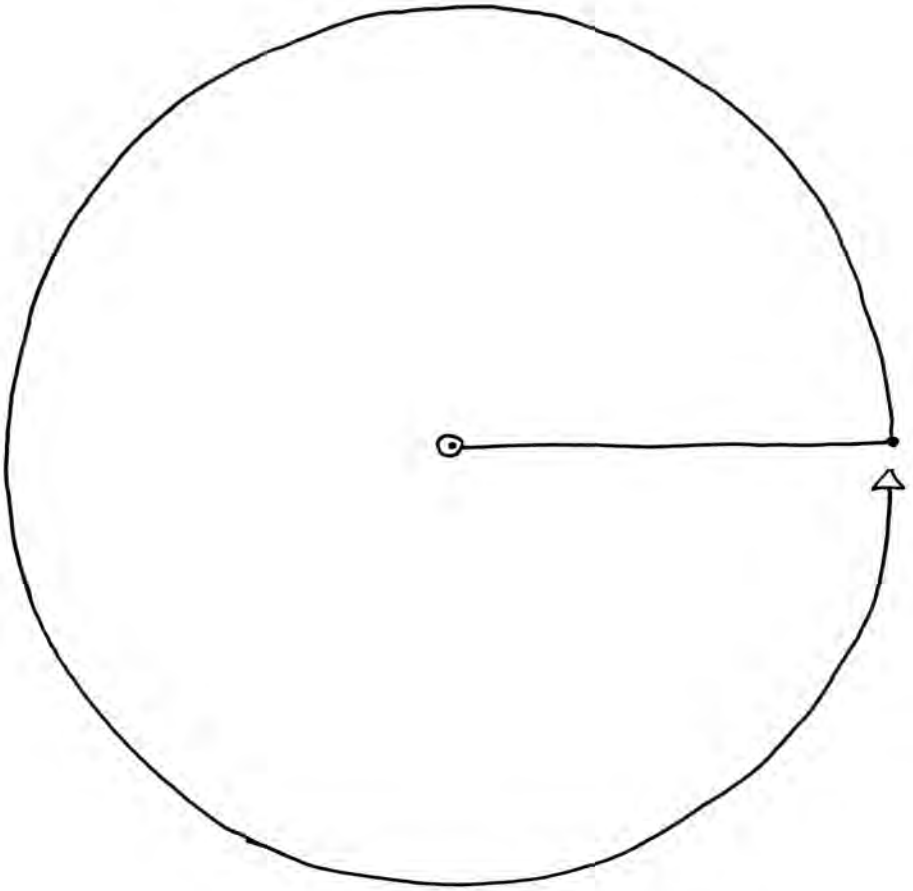
AND WELCOME TO THE TWO-DIMENSIONAL WORLD OF SHAPES.



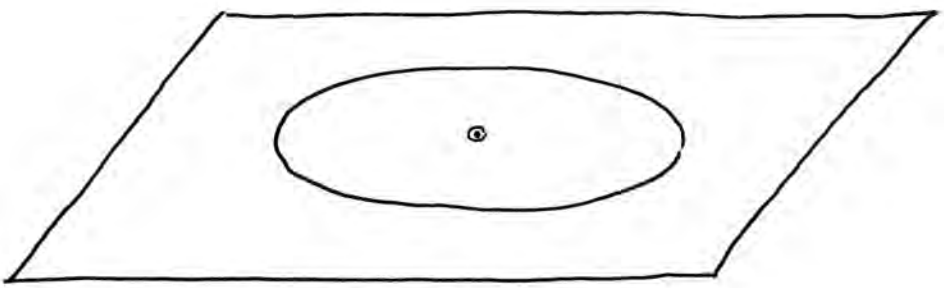
A LINE WITH NO BEGINNING AND NO ENDING.
A LINE IN WHICH EVERY POINT IS EQUIDISTANT FROM A POINT AT ITS CENTER.


CIRCLES ENCOMPASS
OUR LIVES...
WHEN THE MOON HITS YOUR EYE LIKE A BIG PIZZA PIE...

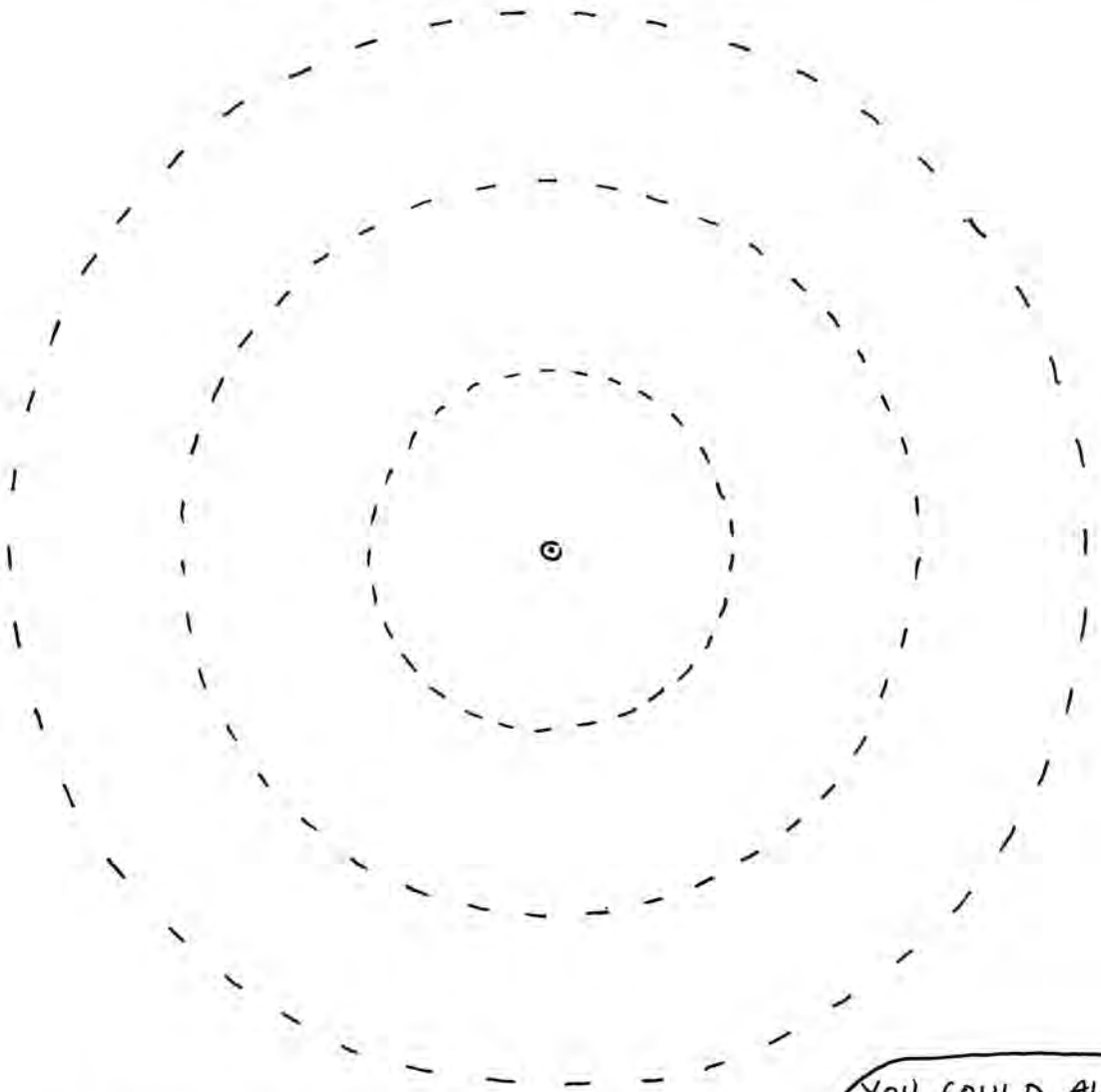
A CIRCLE IS CREATED WHEN A LINE WITH AN END POINT ROTATES AROUND ITS STARTING POINT.



THE CIRCLE ALSO DEFINES A TWO-DIMENSIONAL PLANE.

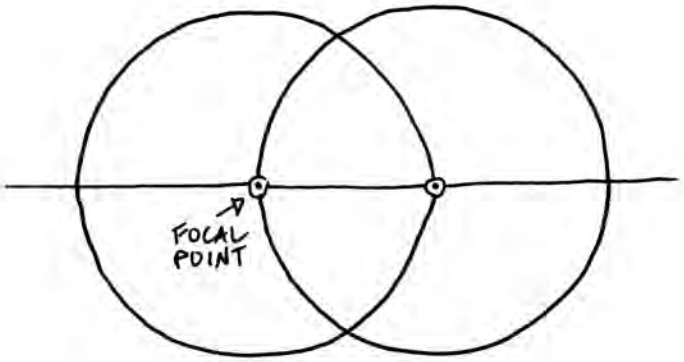


NOW YOU MAKE A CIRCLE. START WITH SETTING THE POINT OF YOUR COMPASS ON THE GIVEN FOCAL POINT BELOW. SEE IF YOU CAN DRAW THREE CONCENTRIC CIRCLES ON THE DOTTED LINES WITHOUT MESSING UP. (IT'S A LOT HARDER THAN IT LOOKS!)

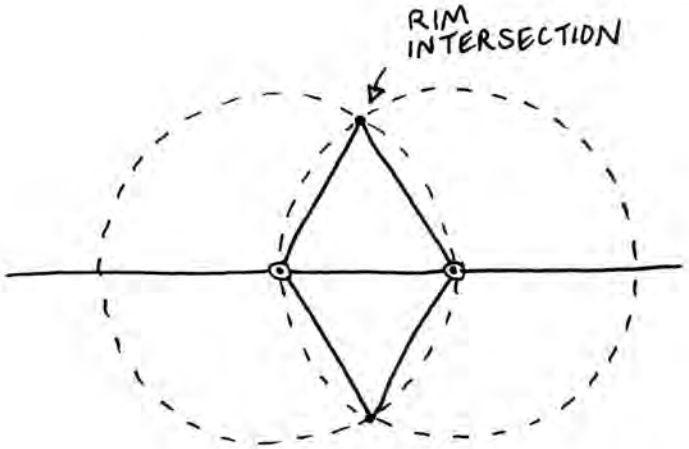


HINT: YOU'LL FIND IT MORE CONTROLLABLE AND SMOOTHER TO LEAN THE COMPASS SLIGHTLY IN THE DIRECTION OF THE SWING. KEEP MORE PRESSURE ON THE POINT THAN THE PENCIL.

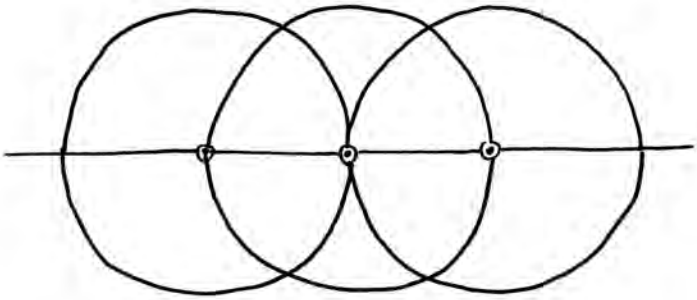
CONNECTING POINTS WITHIN OVERLAPPING CIRCLES PRODUCE MORE SHAPES IN TWO DIMENSIONS.



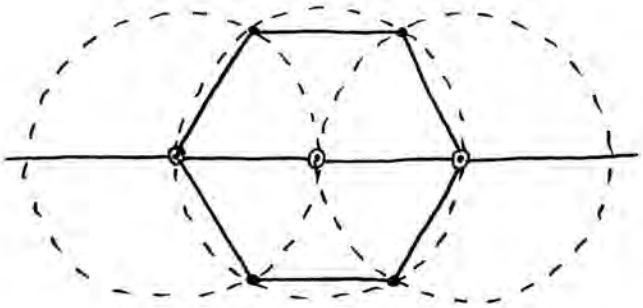
TWO EQUAL-SIZED CIRCLES WITH FOCII ON THE RIMS...



GIVE YOU TWO EQUAL-SIZED TRIANGLES WITH EQUAL-LENGTH LEGS WHEN YOU CONNECT THE RIM INTERSECTIONS TO THE FOCII.



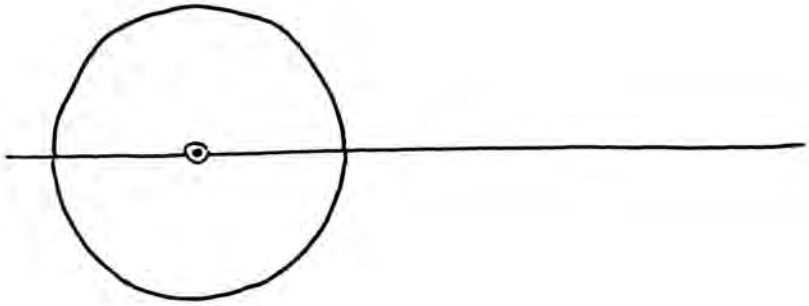
ADD A THIRD EQUAL-SIZED CIRCLE.



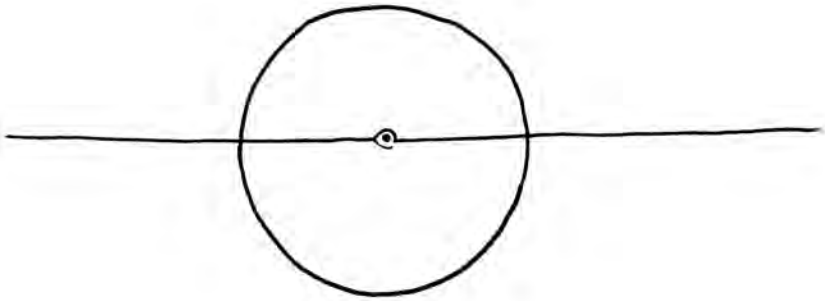
CONNECTING FOCII TO INTERSECTION POINTS GIVES YOU A SIX-SIDED SHAPE.

GO AHEAD AND TRY SOME OVERLAPPING CIRCLE TRICKS FOR YOURSELF.

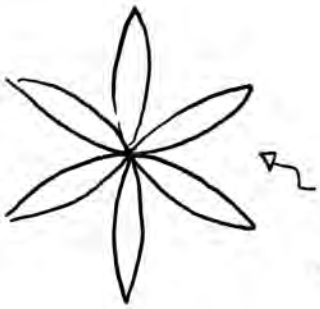
TRIANGLES



HEXAGON

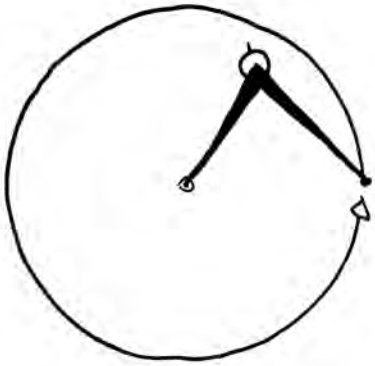


A SIX-PETALED FLOWER!

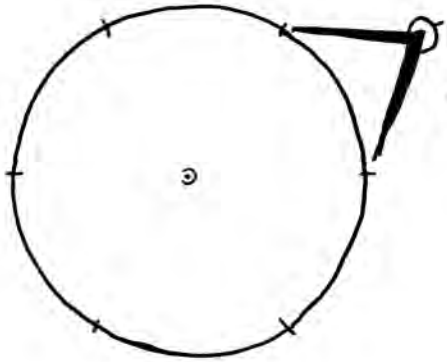


SEE IF YOU CAN MAKE THIS BY ADDING SIX CIRCLES TO THE FIRST.

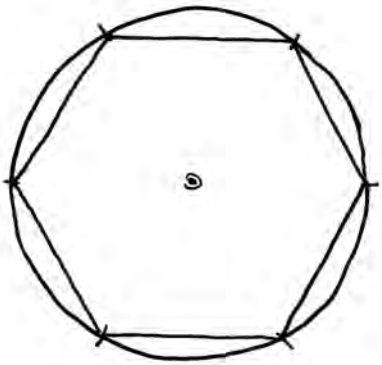
TO LAY OUT A SIX-SIDED WINDOW OR PICTURE FRAME, WE CAN USE THE UNIQUE GEOMETRY OF THE HEXAGON TO MAKE QUICK WORK OF IT.



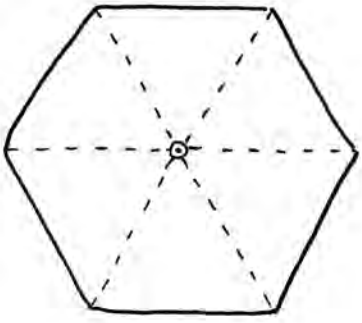
① DRAW A CIRCLE SIZED TO THE DESIRED CIRCUMFERENCE OF THE FRAME.



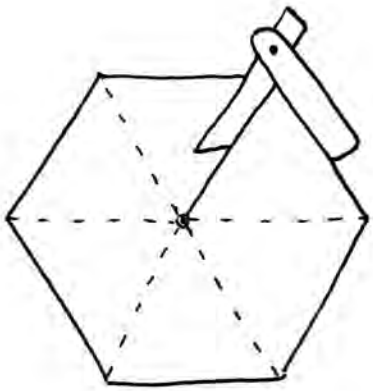
② WITHOUT CHANGING THE COMPASS SETTING, STEP OUT SIX INTERVALS ALONG THE RIM.



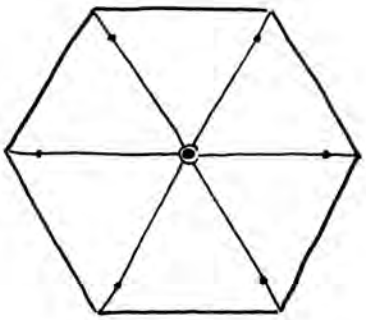
③ CONNECT THE INTERVAL POINTS.



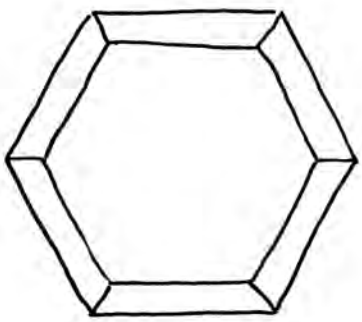
④ DRAW LINES FROM THE FOCUS POINT TO THE RIM INTERSECTIONS. THESE LINES ARE THE ANGLE AT WHICH THE FRAMES JOIN ONE ANOTHER.



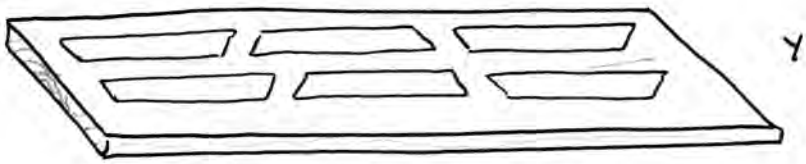
⑤ USE A BEVEL GAUGE TO RECORD AND TRANSFER THIS JOINT ANGLE.



⑥ SET YOUR DIVIDER TO THE DESIRED WIDTH OF THE FRAME (MY EYE LIKES ONE-SIXTH OF THE FACET LENGTH) AND MARK ON EACH RADII LINE.

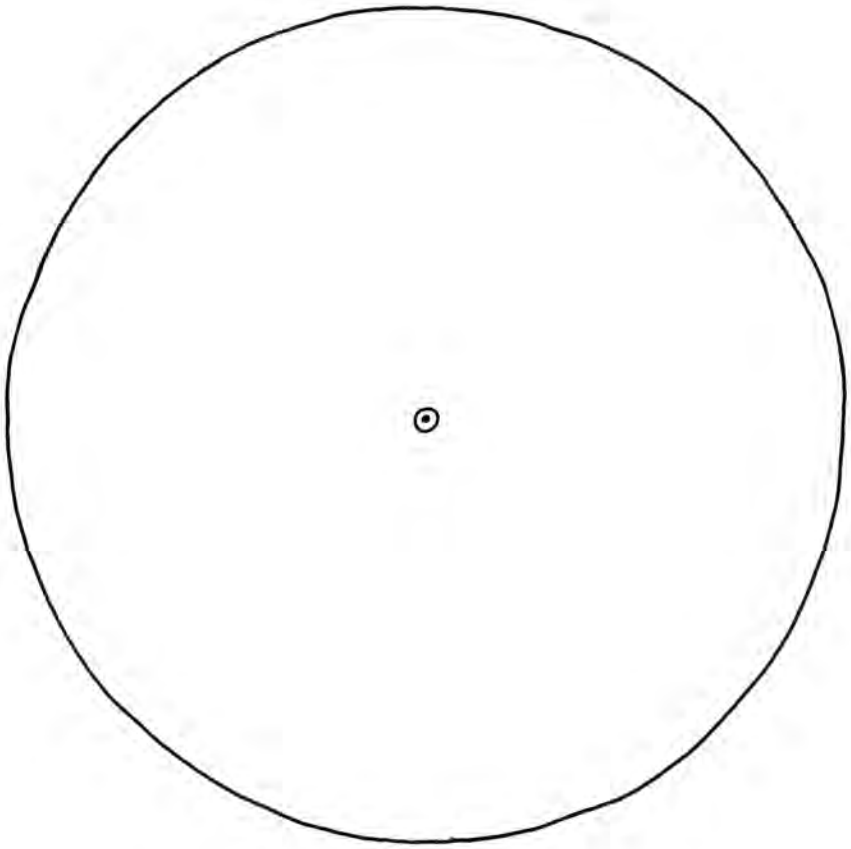


⑦ CONNECT THESE POINTS AND THERE YOU HAVE IT.

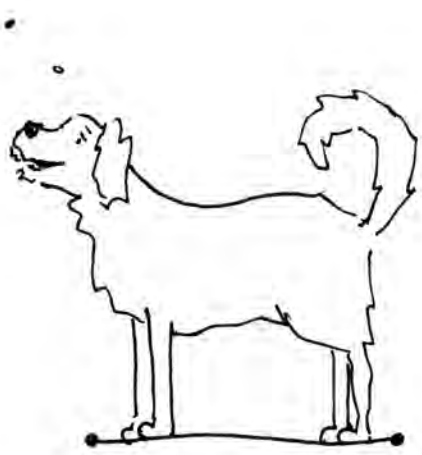


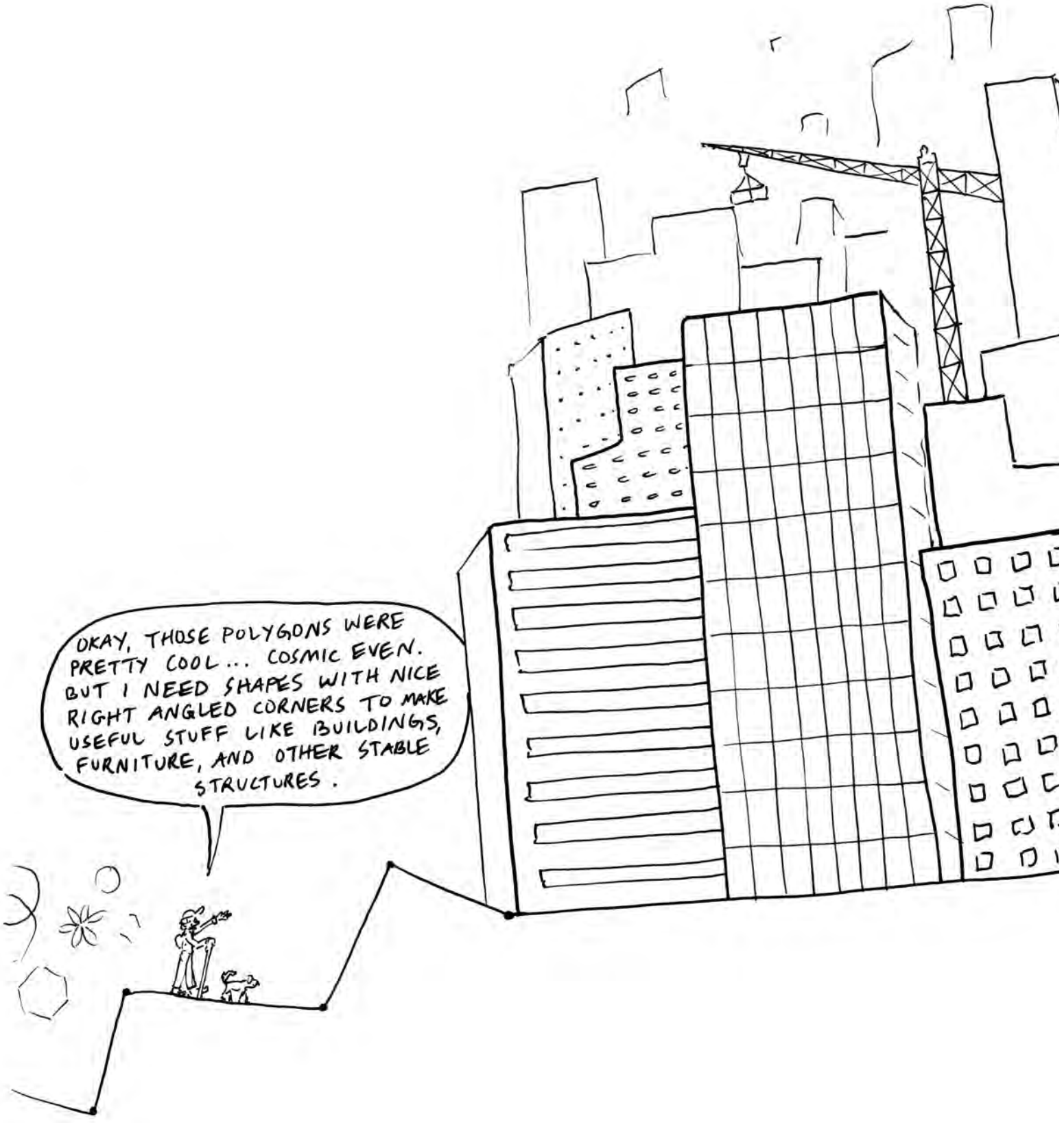
YOU CAN MAKE A TEMPLATE FROM A FULL-SCALE DRAWING FOR LAYOUT ON THE STOCK.

CAN YOU COME UP WITH A SIMPLE WAY TO LAY OUT A SEVEN-SIDED FRAME? TRY IT ON THIS CIRCLE:

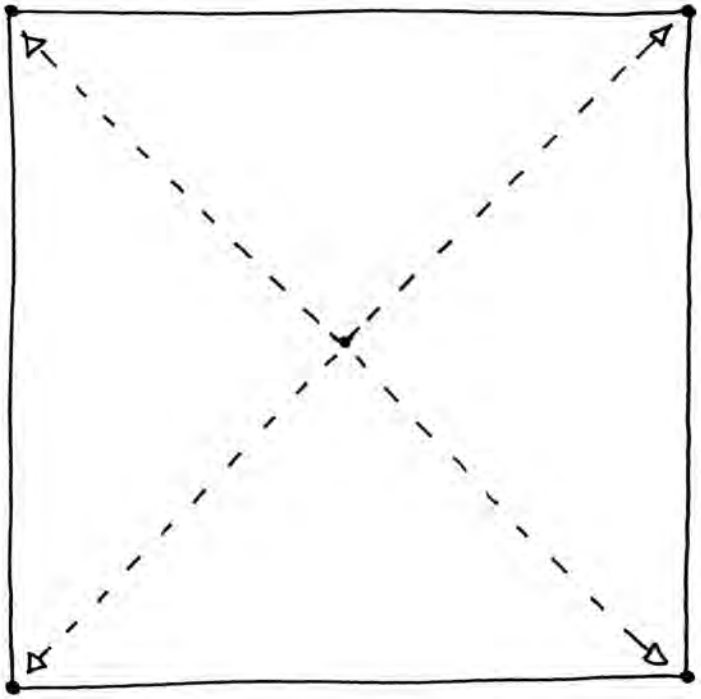


THINK OF THE CIRCLE AS NOTHING MORE THAN A CURVED LINE. NOW THINK ABOUT HOW YOU WOULD DIVIDE A LINE INTO EQUAL INTERVALS.



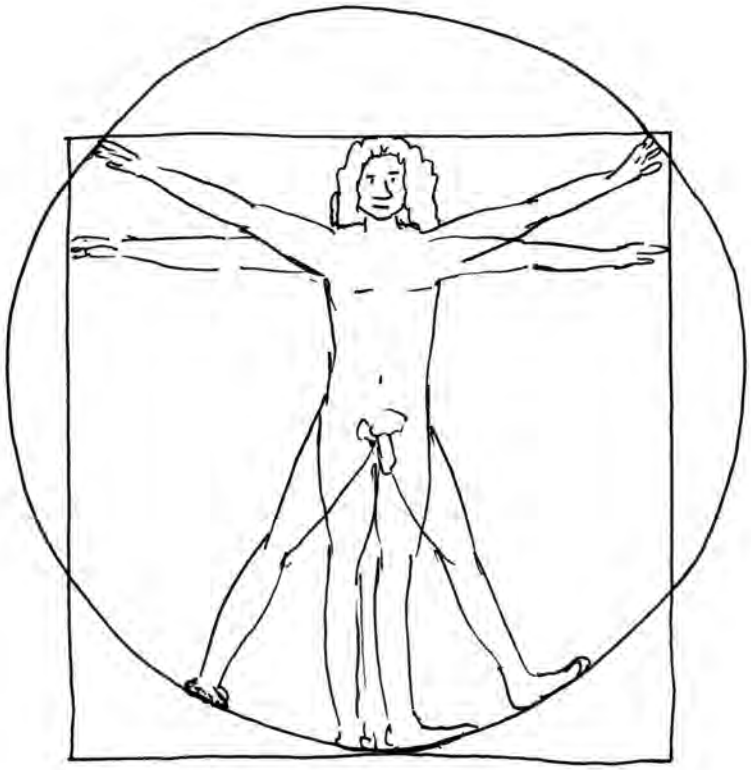

OKAY, THOSE POLYGONS WERE PRETTY COOL... COSMIC EVEN. BUT I NEED SHAPES WITH NICE RIGHT ANGLED CORNERS TO MAKE USEFUL STUFF LIKE BUILDINGS, FURNITURE, AND OTHER STABLE STRUCTURES.

SO WHAT JOURNEYMAN NEEDS, THEN, IS **A SQUARE.**

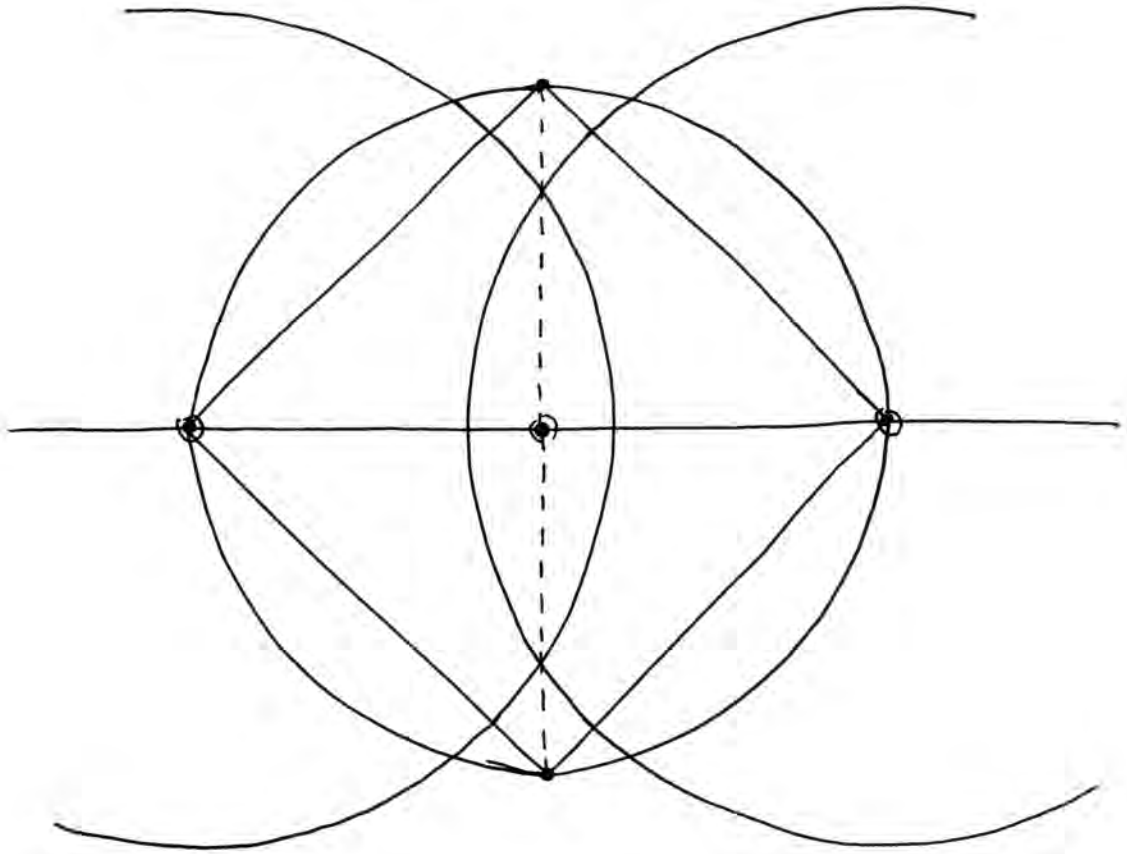


THE SQUARE IS A PROFOUNDLY USEFUL SHAPE THAT HAS FOUR EQUAL-LENGTH SIDES, CORNERS THAT ARE EQUI-DISTANT FROM EACH OTHER AND THAT MEET AT RIGHT ANGLES.

SNIDELY IS RIGHT - JUST LIKE THE ANCIENTS DID MILLENIUM AGO, YOU CAN USE YOUR COMPASS AND STRAIGHT EDGE TO "SQUARE THE CIRCLE."



JUST AS OVERLAPPING CIRCLES PRODUCE TRIANGLES, HEXAGONS AND OTHER POLYGONS BETWEEN THEIR INTERSECTION POINTS, THEY CAN ALSO PRODUCE A PERFECT SQUARE.



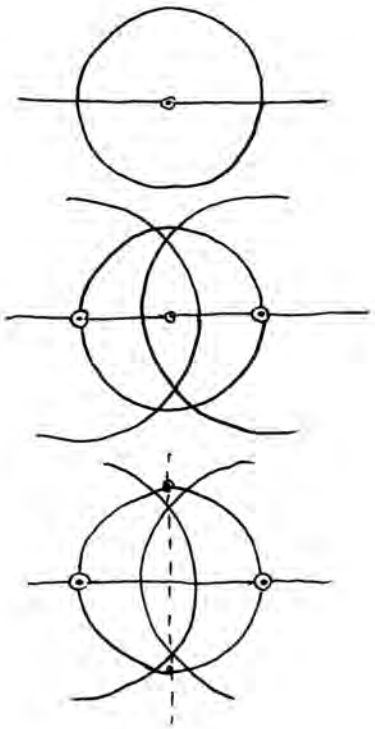
① START WITH A CIRCLE.

② DRAW A LINE THROUGH IT.

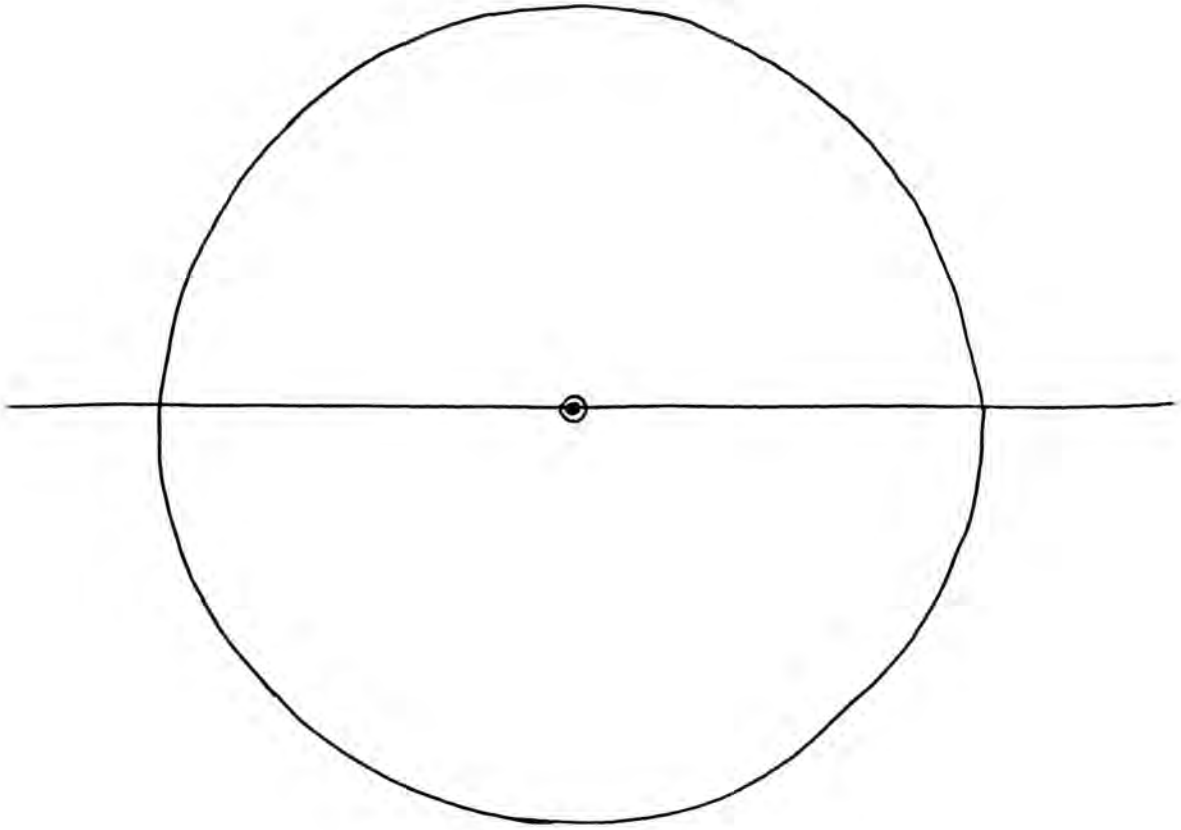
③ DRAW TWO MORE CIRCLES OF LARGER RADIUS CENTERED ON INTERSECTIONS.

④ DRAW A LINE THROUGH THEIR RIM INTERSECTIONS.

⑤ THEN CONNECT THE INTERSECTIONS ON THE FIRST CIRCLE.



"SQUARE" THIS CIRCLE.



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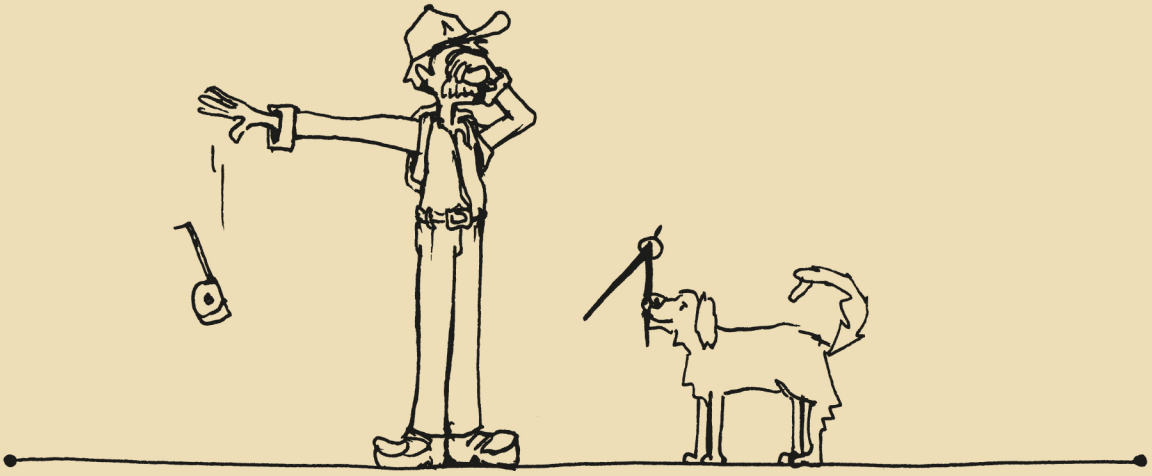
LET'S TAKE A JOURNEY -
AN ADVENTURE EXPLORING THE
TOOLS OF OUR IMAGINATION.

YOU'LL BE EQUIPPED
WITH A WORKING KNOWLEDGE
OF PLANE GEOMETRY AND
A SMALL BACKPACK OF
SIMPLE TOOLS...

...THE SAME COLLECTION OF TOOLS AND KNOW-HOW
THAT MAKERS USED SINCE ANTIQUITY TO CREATE THE
WORLD'S FOREMOST ICONS OF STRUCTURAL INTEGRITY
AND TIMELESS BEAUTY.