1. (2 pts) For the following figures do what is asked:

    a. Shade 2 squares so that it has exactly 2 lines of symmetry

    b. Shade 2 squares so that it has exactly 1 line of symmetry

    c. Shade 3 squares so that it has exactly 2 lines of symmetry

    d. Shade 3 squares so that it has exactly 1 line of symmetry
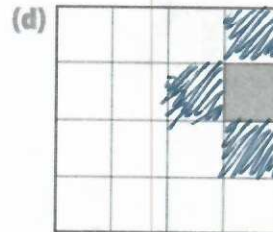
(a)   (b)   (c)   (d)

2. (2 pts) For the following figures do what is asked:

    a. Shade 2 squares so that it has order of rotation symmetry 4

    b. Shade 2 squares so that it has order of rotation symmetry 2

    c. Shade 3 squares so that it has order of rotation symmetry 4

    d. Shade 3 squares so that it has order of rotation symmetry 1

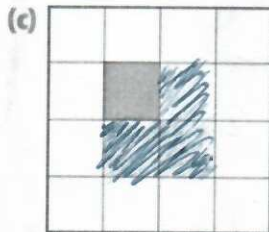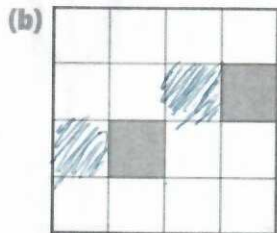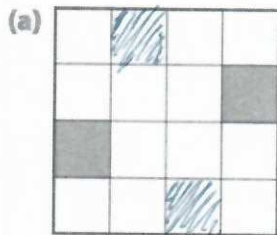(a)   (b)   (c)   (d)

1. (2 pts) For the following figures do what is asked:

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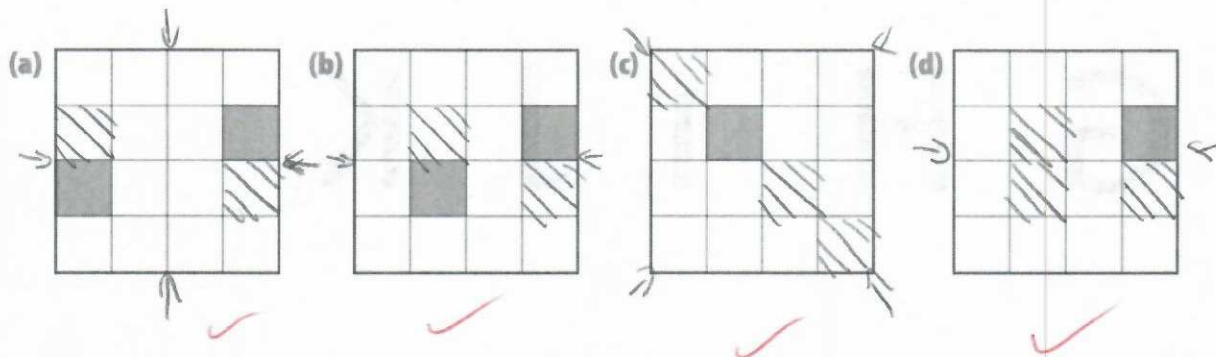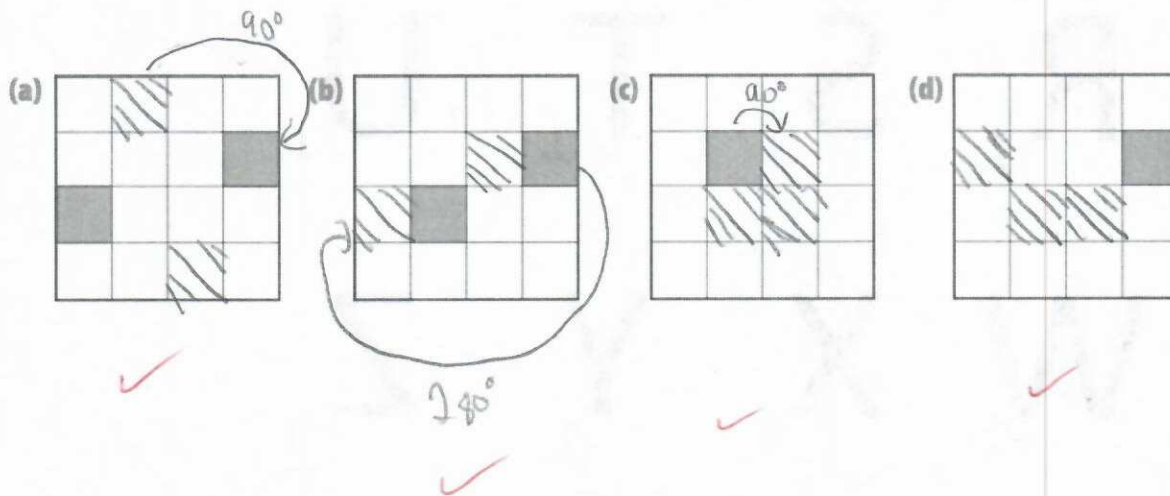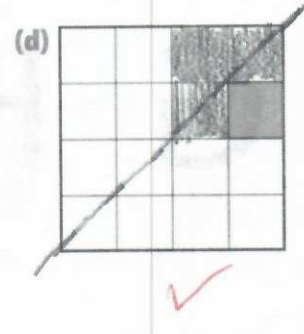   d. Shade 3 squares so that it has exactly 1 line of symmetry

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    c. Shade 3 squares so that it has order of rotation symmetry 4

    d. Shade 3 squares so that it has order of rotation symmetry 1

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    c. Shade 3 squares so that it has exactly 2 lines of symmetry

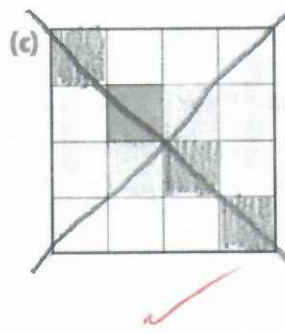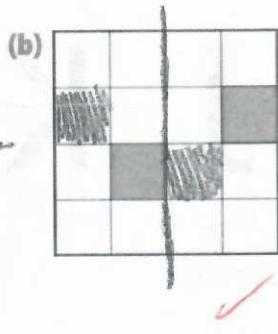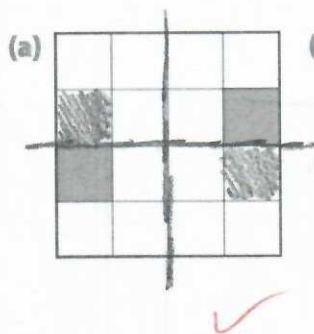   d. Shade 3 squares so that it has exactly 1 line of symmetry

(a)   (b)   (c)   (d)

2. (2 pts) For the following figures do what is asked:

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    c. Shade 3 squares so that it has order of rotation symmetry 4

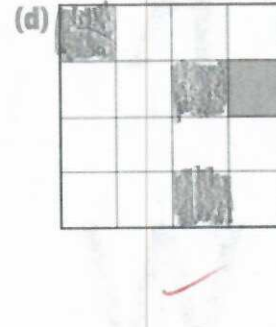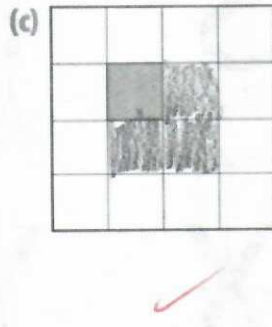   d. Shade 3 squares so that it has order of rotation symmetry 1
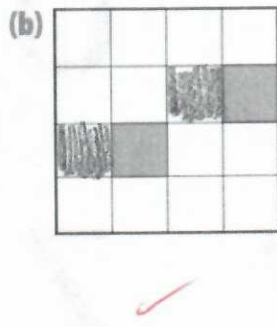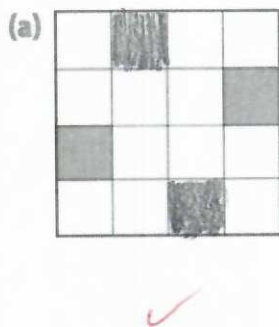
(a)   (b)   (c)   (d)

1. (2 pts) For the following figures do what is asked:

    a. Shade 2 squares so that it has exactly 2 lines of symmetry

    b. Shade 2 squares so that it has exactly 1 line of symmetry

    c. Shade 3 squares so that it has exactly 2 lines of symmetry

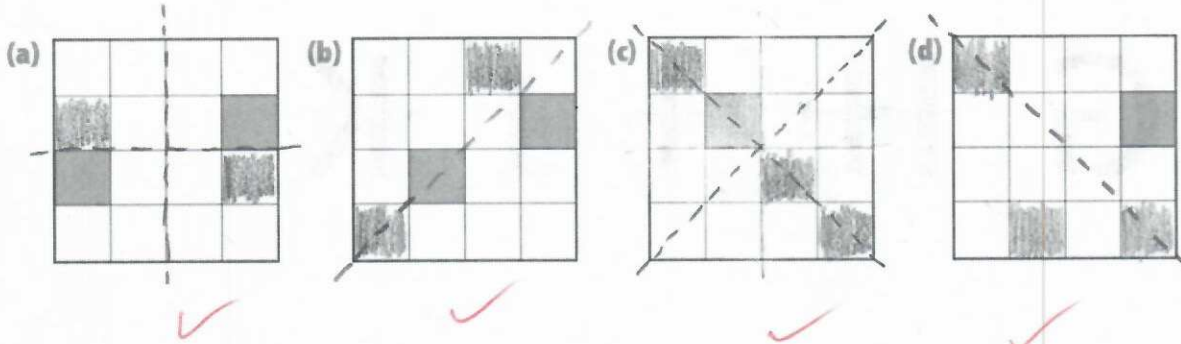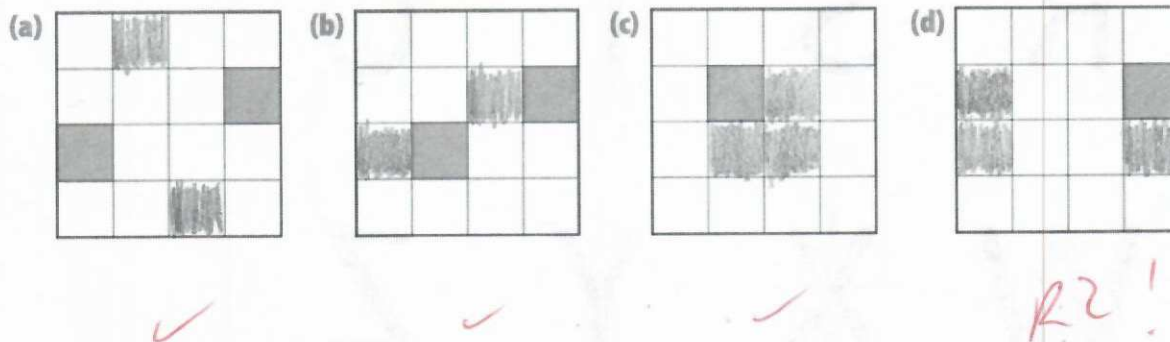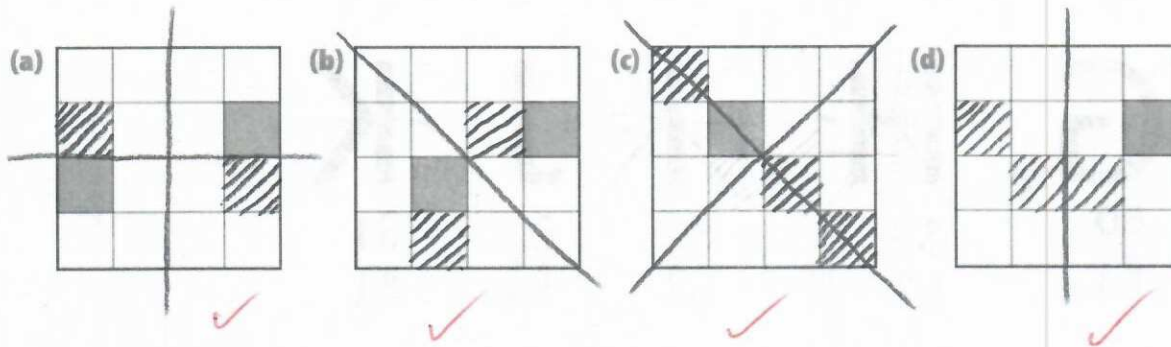   d. Shade 3 squares so that it has exactly 1 line of symmetry

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    a. Shade 2 squares so that it has order of rotation symmetry 4

    b. Shade 2 squares so that it has order of rotation symmetry 2

    c. Shade 3 squares so that it has order of rotation symmetry 4

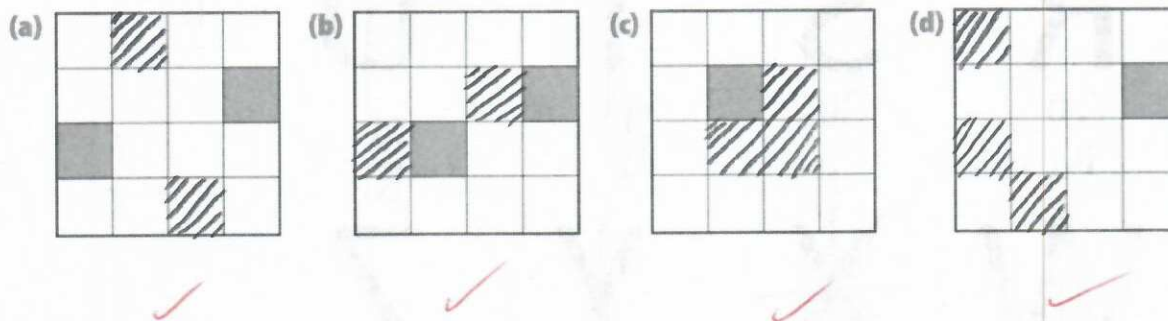   d. Shade 3 squares so that it has order of rotation symmetry 1

R2!

1. (2 pts) For the following figures do what is asked:

   a. Shade 2 squares so that it has exactly 2 lines of symmetry

   b. Shade 2 squares so that it has exactly 1 line of symmetry

   c. Shade 3 squares so that it has exactly 2 lines of symmetry

   d. Shade 3 squares so that it has exactly 1 line of symmetry

2. (2 pts) For the following figures do what is asked:

   a. Shade 2 squares so that it has order of rotation symmetry 4

   b. Shade 2 squares so that it has order of rotation symmetry 2

   c. Shade 3 squares so that it has order of rotation symmetry 4

   d. Shade 3 squares so that it has order of rotation symmetry 1

3. (6 pts) For each letter draw all lines of symmetry, and **below each letter** write the order of rotational symmetry (e.g. "R2").

A
R1

B
R1

C
R1

D
R1

E
R1

F
R1
no line of symmetry

G
R1
no line

H
R2

I
R2

J
R1
no line

K
R1

L
R1
no line

M
R1

N
R2
none

O
R2
but could argue more if perfect circle ✓

P
R1
none

How many more?

Q
R1
none

R
R1
none

S
R2
none

T
R1

U
R1

V
R1

W
R1

X
R2
but could argue R4 if it were a perfect cross

Y
R1

Z
R2
none

✓

3. (6 pts) For each letter draw all lines of symmetry, and **below each letter** write the order of rotational symmetry (e.g. "R2").

A
order 1

B
order 1
no Symmetry
based on the fact
the top of the B
is Smaller   good

C
order 1

D
order 1

E
order 1

F
order 1

G
order 1

H
order 2

I   x
order 2

J
order 1

K
order 1
no Symmetry
if upper part
is Smaller. ✓

L
order 1

M
order 1

N
order 2

O
order 2

P
order 1

Q
order 1

R
order 1

S
Could be
order 2   ✓
if top half
wasn't Smaller

T
order 1

U
order 1

V
order 1
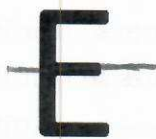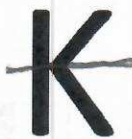
W
order 1

X
order 2

Y
order 1

Z
order 2

3. (6 pts) For each letter draw all lines of symmetry, and **below each letter** write the order of rotational symmetry (e.g. "R2").

A
R1

B
R1

C
R1

D
R1

E
R1

F
R1

G
R1

H
R2

I
R2

J
R1

K
R1

L
R1

M
R1

N
R2

O
R2

P
R1

Q
R1

R
R1

S
R2

T
R1

U
R1

V
R1

W
R1

X
R2

Y
R1

Z
R2

3. (6 pts) For each letter draw all lines of symmetry, and **below each letter** write the order of rotational symmetry (e.g. "R2").

A
1 Symmetry
1 rotation
or no way other than itself

B
1 Symmetry
rotation 1 or none

C
1 or none

D
1 or none

E
or only Fits on itsaf 1 way
1 or none

F
No lines of Summ
1 or no rotation

G
No lines of Symmetry
1 or no rotation

H
2 rotations ✓
2 Symmetry (R2)

I
2 rotations ✗
1 line Sym
2 rotation

J
NO sym
No rotation

K
1 line of sym
no order of rotation or 1

1X

L
No line Sym
No rotation

M
1 line Sym
no rotation or 1 order

N
No line of Sym
2 rotations ✓

O
Infinite Ways ooh! ✗

P
no line of Sym
no rotation or order of 1

Q
no lines Sym
1 or no rotation

R
No lines Sum
No rotation

S
No Symmetry
2 rotations ✓

T
1 line Sym
no rotation

U
1 line Sum
no rotation or 1 order

V
1 line of Summ.
1 order of rotation or none

W
1 line of Sum
1 order of rotation or none
only Folds on itself once

X
2 lines of Sum
2 order of rotation ✓

Y
1 line Summ.
1 order of rotation or none

Z
no line of Summ.
2 order of rotation ✓

Good!

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