

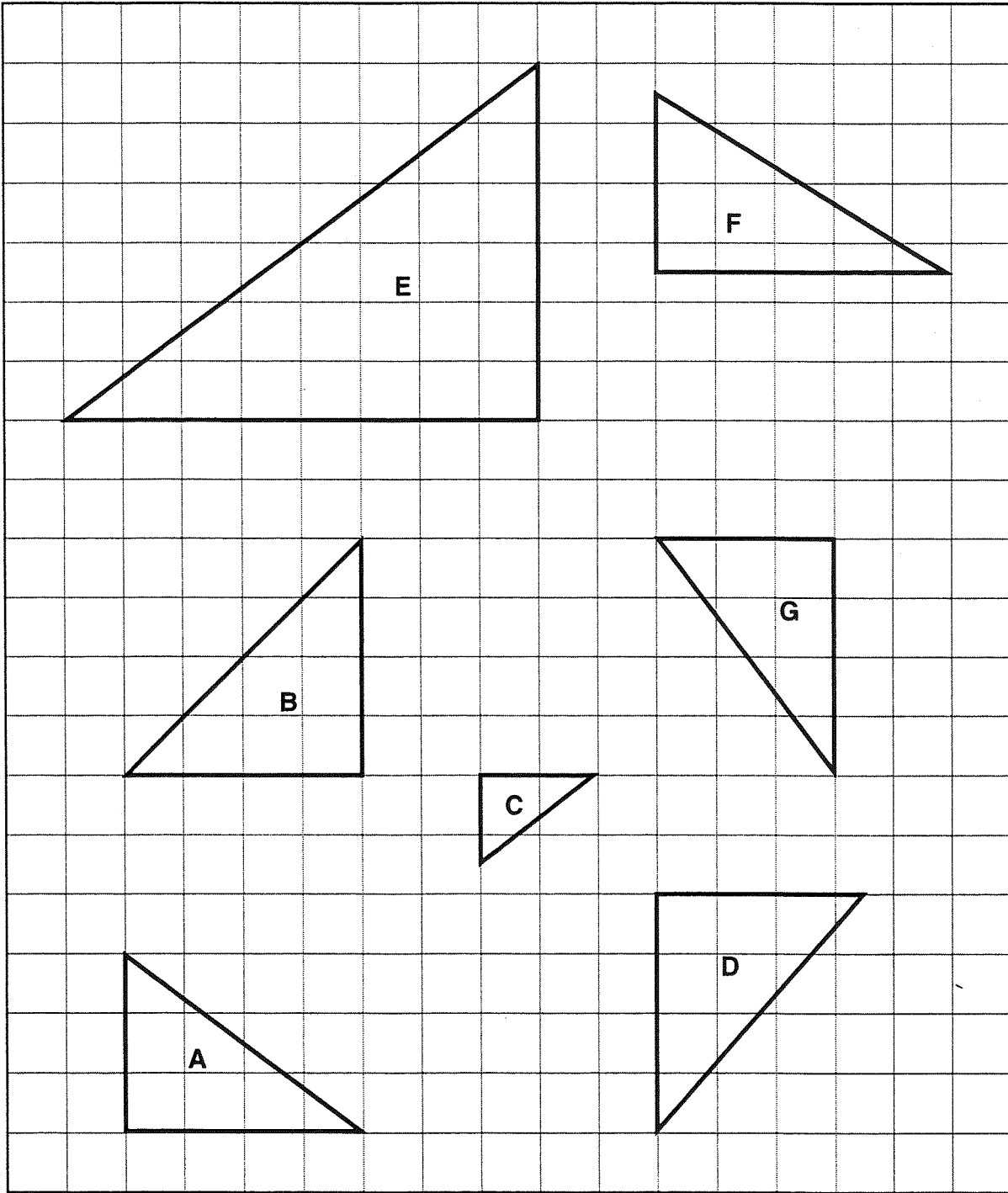
Triangles

T1

This problem gives you the chance to:

- reason about similar figures and scale factor

Here are some right triangles.



1. Which of the triangles on the opposite page is congruent to triangle A? C
 Explain your reasoning.

Both have sides of 3 and 4 with a 90°
angle between

2. Which of the triangles on the opposite page are similar to triangle A? C + E
 Explain how you decided.

The sides of C are all half of A lengths
The sides of E are twice of A lengths

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?
 Show your work.

It will be $\times 3$ bigger across
 and $3 \times$ bigger up

$$A \text{ is } \frac{1}{2} \times 4 \times 3 = 6$$

$$6 \times 3 \times 3 \text{ is } 6 \times 9 = 54$$

54 squares

1. Which of the triangles on the opposite page is congruent to triangle A? G
 Explain your reasoning.

A + G are 3 by 4 by 5

2. Which of the triangles on the opposite page are similar to triangle A? C, F
 Explain how you decided.

C is half A on its sides
F is x2

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?
 Show your work.

$$A \text{ is } \frac{1}{2} \times 4 \times 3 = 6$$

$$6 \times 3 = 18$$

18

1. Which of the triangles on the opposite page is congruent to triangle A? G

Explain your reasoning.

because it has same area

2. Which of the triangles on the opposite page are similar to triangle A? They

Explain how you decided.

all are because they are right triangles

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?

Show your work.

18 units

$$\begin{aligned}
 A &= \frac{1}{2}bh \\
 A &= \frac{1}{2} \times 4 \times 3 \\
 A &= \frac{1}{2} \times \frac{4}{1} \times \frac{3}{1} \\
 A &= 6 \text{ units} \\
 &\times 3 \\
 \hline
 &18 \text{ units}
 \end{aligned}$$

1. Which of the triangles on the opposite page is congruent to triangle A? G

Explain your reasoning.

b/c they have the same sides
& area

2. Which of the triangles on the opposite page are similar to triangle A? C

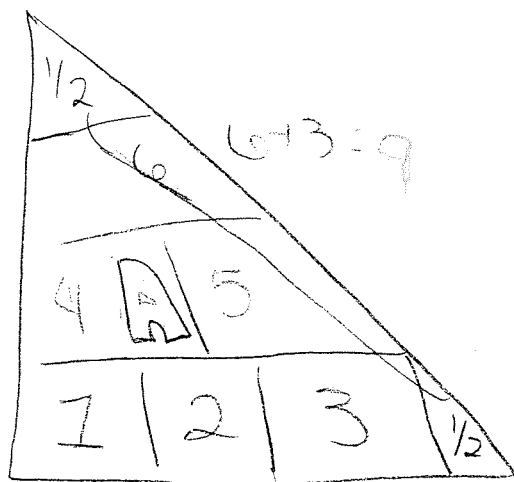
Explain how you decided.

it's just smaller

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?

Show your work.

9



1. Which of the triangles on the opposite page is congruent to triangle A? G

Explain your reasoning.

They are both right triangles with sides
3 and 4

2. Which of the triangles on the opposite page are similar to triangle A? C & E

Explain how you decided.

All right triangles but C is all half
the size of A in length and E is
twice its size

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?
Show your work.

54

Area of A is 6

1. Which of the triangles on the opposite page is congruent to triangle A? G
 Explain your reasoning.

They are the same shapes with the same sides 3, 4 and 5 (the special triangle)

2. Which of the triangles on the opposite page are similar to triangle A? C and E
 Explain how you decided.

C is 2 and $1\frac{1}{2}$ A is 4 and 3, twice as big
 E is 8 and 6 twice as big as A

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?
 Show your work.

54

It will be $4 \times 3 = 12$
 by $3 \times 3 = 9$

$$\text{Area} = \frac{1}{2} \times 12 \times 9 = 6 \times 9 = 54$$

1. Which of the triangles on the opposite page is congruent to triangle A? G

Explain your reasoning.

It has sides 3 and 4 like A

2. Which of the triangles on the opposite page are similar to triangle A? C, E

Explain how you decided.

The sides for C are 2, 1½ that's A ÷ 2

" " E " B, 6 " A × 2

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?

Show your work.

19½

Area of A is $6\frac{1}{2}$

$$6\frac{1}{2} \times 3 = 19\frac{1}{2}$$

1. Which of the triangles on the opposite page is congruent to triangle A? g

Explain your reasoning.

a and g fit over each other exactly

2. Which of the triangles on the opposite page are similar to triangle A? e

Explain how you decided.

the sides of e are double the sides of a

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?

Show your work.

56

$$\frac{1}{2} \times 4 \times 3 \times 9 =$$

1. Which of the triangles on the opposite page is congruent to triangle A? $\triangle G$
 Explain your reasoning.

if you could fold $\triangle A$ and it would go on $\triangle G$

2. Which of the triangles on the opposite page are similar to triangle A? $\triangle F$
 Explain how you decided.

it is the same shape, size, and looks the same

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?
 Show your work.

$$\begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array}$$

$$A = 18$$

1. Which of the triangles on the opposite page is congruent to triangle A? g

Explain your reasoning.

it is just the same size as a

2. Which of the triangles on the opposite page are similar to triangle A? b and d

Explain how you decided.

they have one side of 4 like a but are a bit taller

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?

Show your work.

It will be $4 \times 3 = 12$ base

$3 \times 3 = 9$ high

$$\frac{1}{2} \times 12 \times 9 = 54$$

54

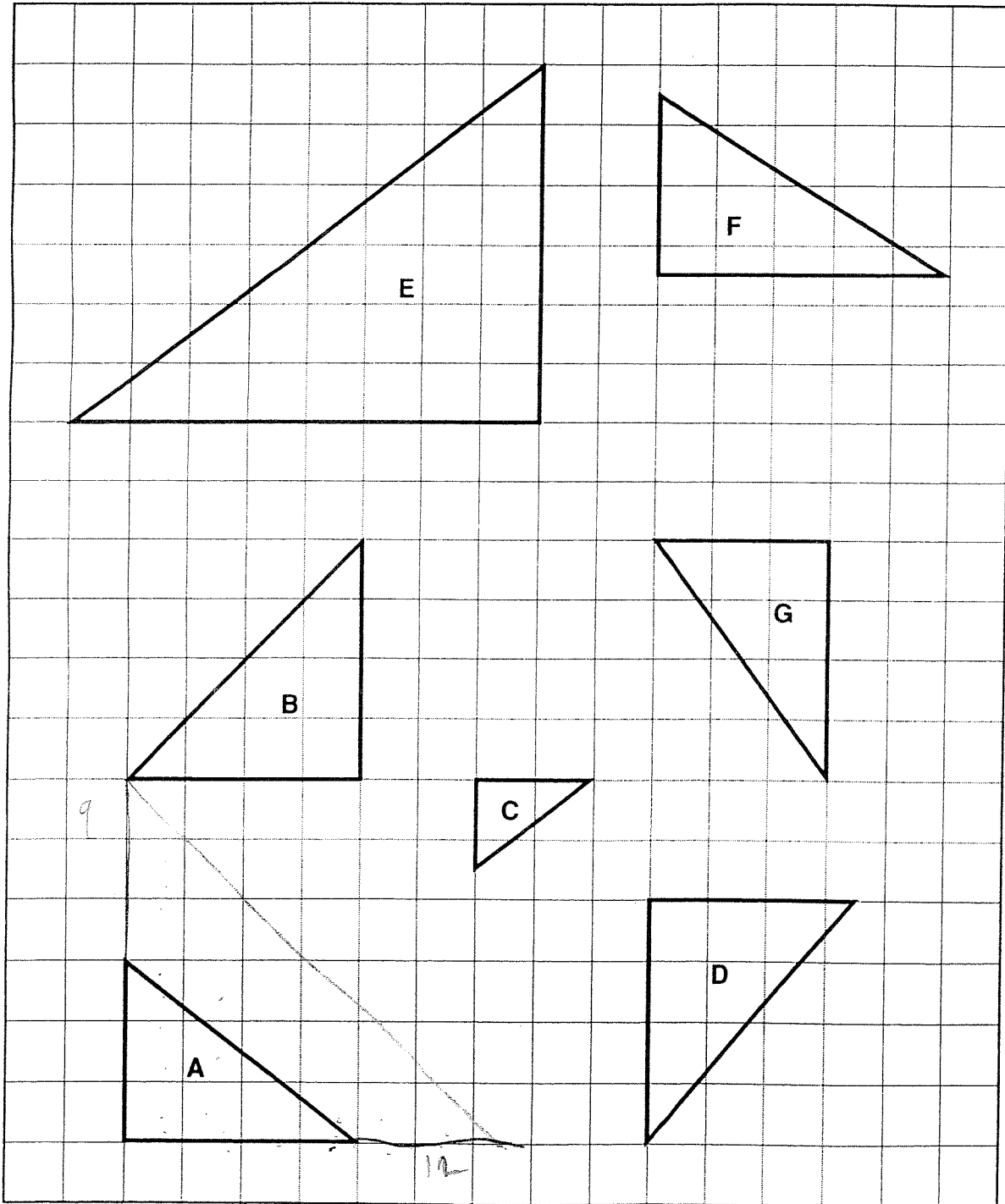
Triangles

This problem gives you the chance to:

- reason about similar figures and scale factor

S6

Here are some right triangles.



1. Which of the triangles on the opposite page is congruent to triangle A? G

Explain your reasoning.

G takes up the same number of units as A

2. Which of the triangles on the opposite page are similar to triangle A? F

Explain how you decided.

F is facing the same direction,

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?

Show your work.

54 units

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2} \times \frac{12^6}{1} \times \frac{9}{1} = \frac{54}{1} = 54$$

1. Which of the triangles on the opposite page is congruent to triangle A? G
 Explain your reasoning.

It is same size and shape as A just
turned round

2. Which of the triangles on the opposite page are similar to triangle A? C and E
 Explain how you decided.

As sides shared by 2 give C
As sides times by 2 give E

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?
 Show your work.

53

As areas $\frac{1}{2} \times 4 \times 3 = 6$

it will be $\times 3$ up and $\times 3$ across

$$6 \times 3 \times 3 = 53$$

1. Which of the triangles on the opposite page is congruent to triangle A? Γ
 Explain your reasoning.

A and Γ have same sides of 3 and 4 and
same shape

2. Which of the triangles on the opposite page are similar to triangle A? Γ & E
 Explain how you decided.

Γ is half the size of A, it is $4 \div 2$
 $= 2$ and $3 \div 2 = 1\frac{1}{2}$

E is $\times 2$ of A

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?
 Show your work.

18 squares

A has 6 squares

6×3 is 18 squares

1. Which of the triangles on the opposite page is congruent to triangle A? triangle G
Explain your reasoning.

They are the same size, and if you were
to fold one over the other they would go over
each other.

2. Which of the triangles on the opposite page are similar to triangle A? triangle F
Explain how you decided.

They are both going the same directions and
they both on the same angle.

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?
Show your work.

don't know

1. Which of the triangles on the opposite page is congruent to triangle A? G

Explain your reasoning.

They have same areas

2. Which of the triangles on the opposite page are similar to triangle A? C, E

Explain how you decided.

C is half as long and high as A

E is $\times 2$

3. If triangle A is enlarged by a scale factor of 3, what will be the area of the new triangle?

Show your work.

54

$$6 \times 9 = 54$$