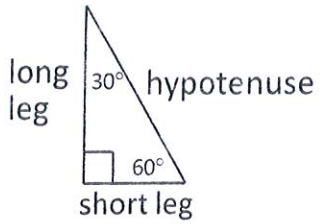
Key

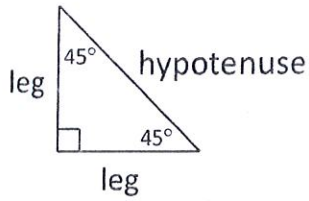
Special Right Triangles



$$\text{short leg} = \frac{1}{2} \cdot \text{hypotenuse}$$

$$\text{long leg} = \sqrt{3} \cdot (\text{short leg})$$

$$\text{hypotenuse} = 2 \cdot (\text{short leg})$$

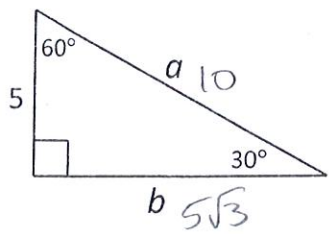


legs are equal

$$\text{hypotenuse} = \sqrt{2} \cdot (\text{leg})$$

Use the 30-60-90 and 45-45-90 triangle relationships to solve for the missing sides. Use the answers to reveal the name of the team that Abraham M. Saperstein established and sent on the road in 1927.

1



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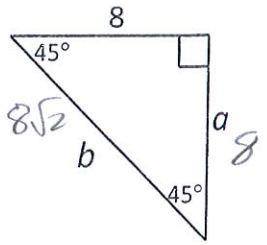

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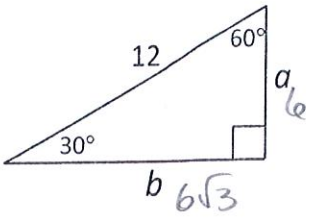

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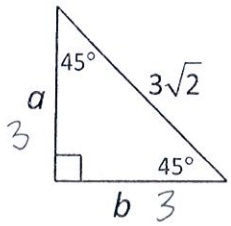

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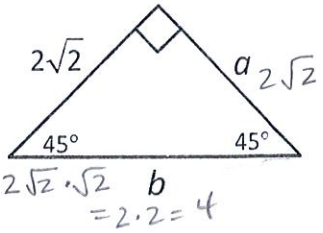

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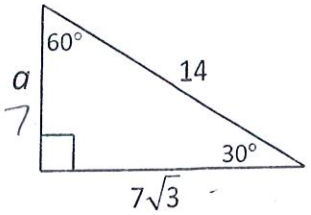

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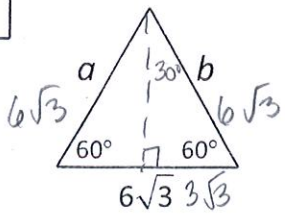
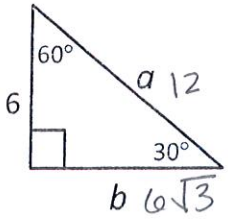


8



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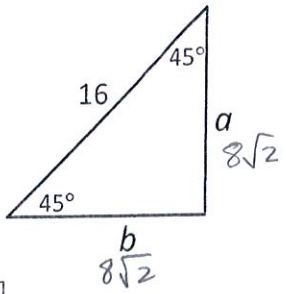


8	$2\sqrt{2}$	3	6	$5\sqrt{3}$	4	7	12	$8\sqrt{2}$	10	$6\sqrt{3}$
A	B	E	G	H	L	M	O	R	S	T

T	h	e		H	a	r	l	e	m
8b	1b	4a		1b	2a	9b	5b	4b	6a

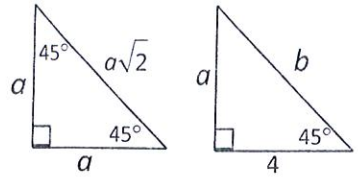
G	l	o	b	e	t	r	o	t	t	e	r	s
3a	5b	8a	5a	4a	7a	2b	8a	7b	3b	4b	9a	1a

Key

Name: _____ Date: _____ Hour: _____

Special Right Triangles

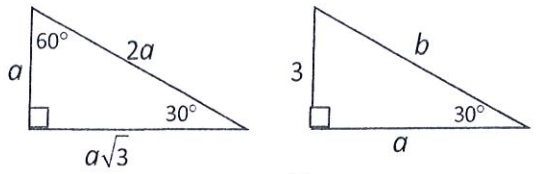
45-45-90 Triangle



$a = 4$

$b = 4\sqrt{2}$

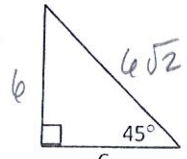
30-60-90 Triangle

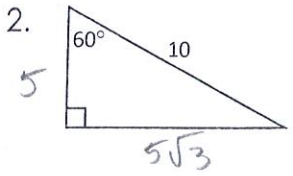


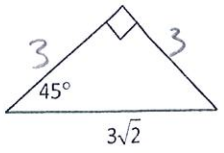
$a = 3\sqrt{3}$

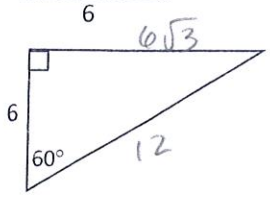
$b = 2 \cdot 3 = 6$

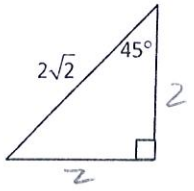
Find the missing sides.

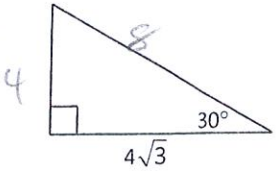
1. 

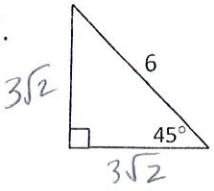
2. 

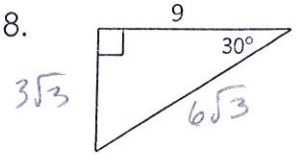
3. 

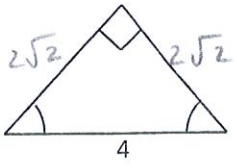
4. 

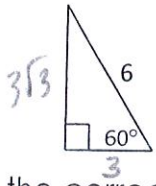
5. 

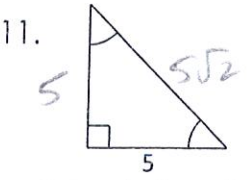
6. 

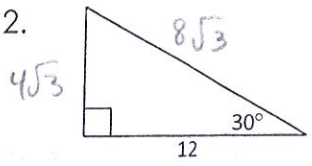
7. 

8. 

9. 

10. 

11. 

12. 

Cross out the correct answers. The remaining letters (one per space) complete the statement.

~~5~~ EQ	9 HA	~~$6\sqrt{2}$~~ UA	~~3~~ LT	10 LF	~~$3\sqrt{2}$~~ OT	~~3~~ HE	~~$4\sqrt{3}$~~ SQ	~~$3\sqrt{2}$~~ UA	~~12~~ RE	~~$2\sqrt{2}$~~ RO
~~$6\sqrt{3}$~~ OT	~~$5\sqrt{3}$~~ OF	25 TH	~~$3\sqrt{3}$~~ ER	~~$6\sqrt{3}$~~ AD	~~5~~ IU	20 EH	~~3~~ SO	~~$3\sqrt{3}$~~ FT	36 YP	~~2~~ PY
11 OT	~~4~~ TH	16 EN	~~6~~ AG	~~8~~ OR	32 US	~~$5\sqrt{2}$~~ AS	~~2~~ TH	7 E.	~~$8\sqrt{3}$~~ T.	~~$2\sqrt{2}$~~ S.

In a 30-60-90 degrees right triangle, the side opposite the 30-degree angle is

Half the hypotenuse