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Mathematics Department Homework Pack

Year 8 Module 6 Intermediate

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Name

Class Teacher

1. Simplify the following expressions

- a. $b + 3b + 4b$ [1]
- b. $6a - 4a$ [1]
- c. $4b + 3a + 7b + 2a$ [2]
- d. $7a + 5b - 4a + 3b$ [2]
- e. $3a + 2b - 2a - 5b$ [2]

2. $a = 3$ $b = 5$ By substituting find the values of the following expressions

- a. $a + b$ [1]
- b. $3b$ [2]
- c. b^2 [2]
- d. $4a - 2b$ [2]

3. Solve the following

- | | |
|---|--|
| <ul style="list-style-type: none"> a. $x + 7 = 11$ [1] b. $x - 9 = 23$ [1] c. $3x = 27$ [1] | <ul style="list-style-type: none"> d. $\frac{x}{5} = 4$ [1] e. $x + 6 = 4$ [1] f. $x - 5 = -2$ [1] |
|---|--|

4. Solve the following

- | | |
|--|--|
| <ul style="list-style-type: none"> a. $2x + 7 = 19$ [2] | <ul style="list-style-type: none"> b. $3x - 9 = 21$ [2] |
|--|--|

To improve I need to

Name

Algebra(1)

$\frac{\dots}{25} \times 100 = \dots\%$

1. Simplify $7b - 3b + 2b$ [1]

2. $a = 4$ $b = 2$ Find the values of $2a + 3b$ [2]

3. Solve the following

a. $x + 9 = 15$ [1] c. $4x = 24$ [1]

.....
.....

b. $\frac{x}{3} = 7$ [1] d. $x - 8 = 2$ [1]

.....
.....

4. Solve the following

a. $3x - 7 = 8$ [2] b. $5x = 2x + 12$ [2]

.....
.....
.....

5. Expand the following

a. $3(x + 4)$ [2] c. $5(x - 7)$ [2]

.....

b. $4(2x - 5)$ [2] d. $8(4 - 3x)$ [2]

.....

6. Expand and Simplify [3]

$3(x + 5) + 3(2x + 5)$
.....
.....

7. Expand and Solve [3]

$2(x + 7) = 20$
.....
.....

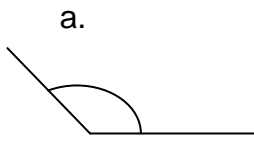
To improve I need to

Name

Angles-1

$$\frac{\dots}{20} \times 100 = \dots\%$$

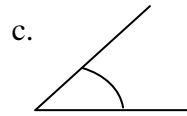
1. Write the name for each of these angles.



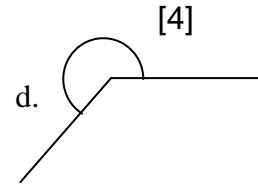
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.....

[4]

2. Draw the following angles:

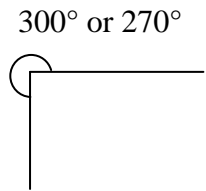
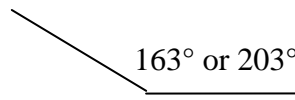
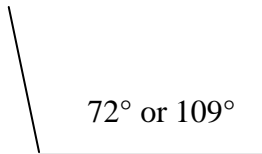
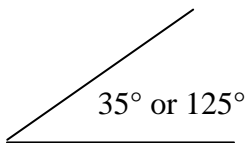
[4]

a. 20°

b. 145°

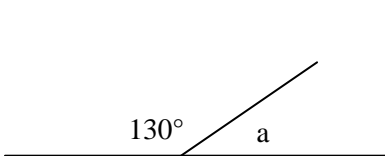
3. Which is the correct angle. **Circle** the correct value.

[4]

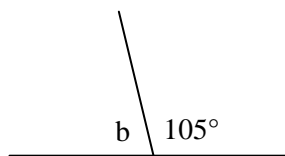


4. Calculate the unknown angle

[6]



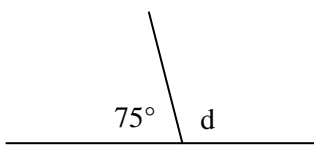
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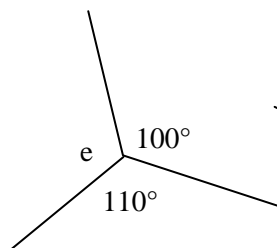
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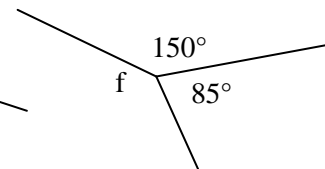
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5. Complete the following sentences

[2]

a. Angles on a straight line add to

b. Angles around a add to 360°

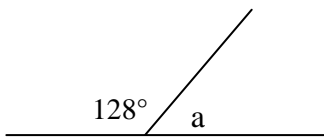
To improve I need to.....

Name

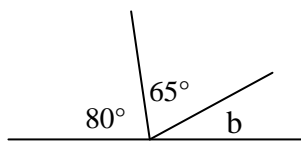
Angles-2

$$\frac{\dots}{30} \times 100 = \dots\%$$

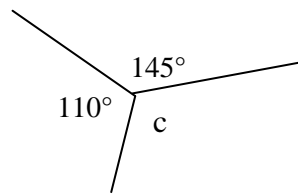
1. Calculate the unknown angle. [5]



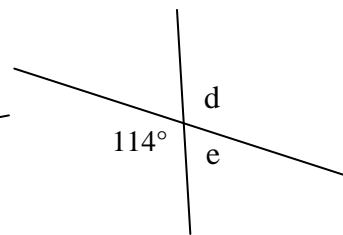
a.....



b.....



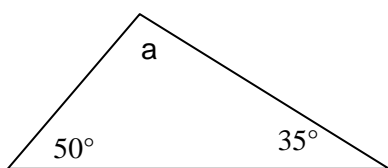
c.....



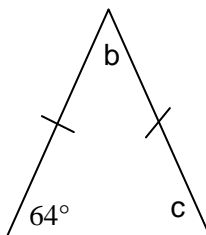
d.....

e.....

2. Calculate the unknown angle. [6]

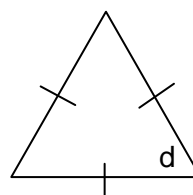


a.....

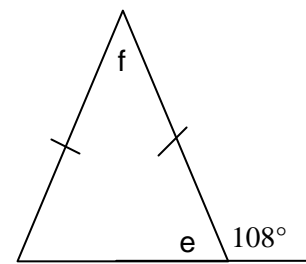


b.....

c.....



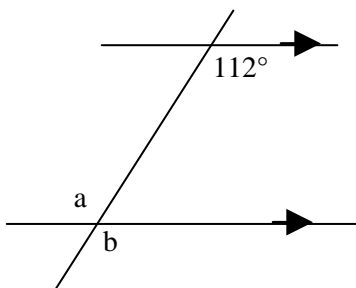
d.....



e.....

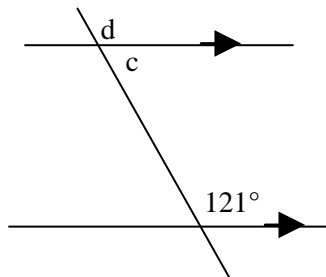
f.....

3. Calculate the unknown angle. [6]



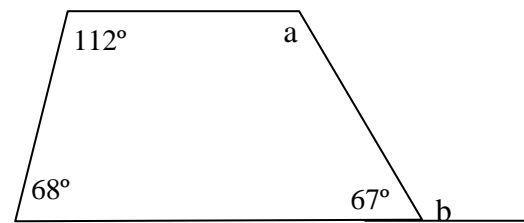
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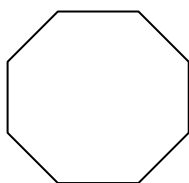
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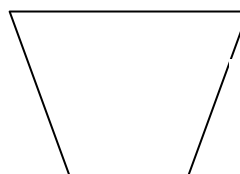
4. Name the type of angle that is between 90° and 180° [1]

5. Name the following Shapes

[2]

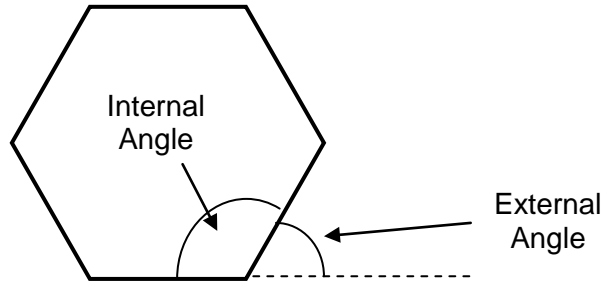


.....



.....

6. What is the size of the external and internal of a regular hexagon



Show your working out [4]

.....

.....

.....

Internal External

7. You will need to draw the following diagram to scale on this page.
 Draw the path of the helicopter, use a 1cm = 1km

A helicopter starts from point A.
 It travels 4km on a Bearing of 070° to point B. [2]
 It then travels from B, 6km on a Bearing of 160° to point C [2]

Write down:

- a. the **distance** of C from A [1]
- b. the **bearing** of C from A. [1]



To improve I need to.....

Name

Estimates

$\frac{\dots}{30} \times 100 = \dots\%$

1. Round the following [8]

- a. 4.7 to the nearest whole number.....
- b. 3.19 to the nearest whole number.....
- c. 45 to the nearest 10
- d. 189 to the nearest 10
- e. 802 to the nearest 10
- f. 678 to the nearest 100
- g. 318 to the nearest 100
- h. 1568 to the nearest 100

2. Round the following to the number of decimal place shown [4]

- a. 4.35 to 1.d.p
- b. 87.934 to 2.d.p
- d. 0.791 to 1.d.p
- e. 19.085 to 2.d.p

3. Calculate the following. Give your answers correct to 1 decimal place [4]

(Use a calculator)

- a. $\sqrt{37}$
- c. 1.75^2

4. Round 4130 to 1 significant figure [1]

4130 1.s.f.

5. Estimate the following [1]

The distance from Holyhead to Cardiff is 205.3 miles this is roughly miles

6. **Estimate** the answers to these using numbers rounded to 1.s.f. [12]

Show clearly the numbers you've used

- a. 3.8×6.7
- b. 73×84
- c. 875×7.9
- d. 41×378

To improve I need to.....

Name

Reasoning -1

$\frac{\dots}{15} \times 100 = \dots\%$

- 1. Drinks are sold from a van parked outside an office block. The following signs are shown alongside the van.

<u>OPEN</u>	
Monday	8:00 a.m. – 2:00 p.m.
Tuesday	8:00 a.m. – 2:00 p.m.
Wednesday	8:00 a.m. – 8:00 p.m.
Thursday	8:00 a.m. – 2:00 p.m.
Friday	8:00 a.m. – 2:00 p.m.
Saturday	9:00 a.m. – 1:30 p.m.
Sunday	Closed

<u>PRICES</u>			
	<u>Small</u>	<u>Medium</u>	<u>Large</u>
TEA	80p	£1.00	£1.15
COFFEE	£1.00	£1.20	£1.45
JUICE	£1.10	£1.30	£1.55

- a. On which day is the van open later than usual? [1]
- b. For how long is the van open to sell drinks on a Monday?hours. [1]
- c. How much would you have to pay altogether for a small tea and a large coffee?
..... [2]

You can use a calculator but you must write down how you calculated the answer

- 2. Gary walks 400 metres to school and 400 meters back.
How far does he walk in a school year (195 school days) ? [4]

Answer

- 3. In a sponsored walk 186 people walked 45 km.
What was the total distance they walked?. Show your working. [4]

Answer

- 4. Simon rents a car for a total of £450. The rental charges are £150 for the first day and £75 per day after that. For how many days did Simon rent the car? [3]

Answer

To improve I need to.....

Name

Numeracy -1

$\frac{\dots}{20} \times 100 = \dots\%$

1. Write down the first 10 Square numbers

Answer [2]

2. Write down the first 10 multiples of 11

Answer [3]

3. Write down all the factors of

a. 32 Answer [2]

b. 35 Answer [2]

4. Calculate

a. 6^2 Answer $\sqrt{64}$ Answer [4]

b. 9^2 Answer 3^3 Answer

5. Write down a Prime number between 25 and 30 Answer[1]

6. What number must be added to 67 to make 112? Answer[1]

7. What is the difference between 87 and 52 Answer[1]

8. A house costs one hundred and fifteen thousand seven hundred and fifty pounds.
Write this amount in figures. [1]

.....

9. Write, in figures, the number seven thousand four hundred and twenty-five. [1]

.....

10. The numbers 7, 5, 3 and 8 are printed on four cards. [2]

7

5

3

8

Arrange the cards to make
the largest four digit number,

the smallest four digit number.

To improve I need to.....

Name

Numeracy -2

$$\frac{\dots}{100} \times 100 = \dots\%$$

Complete the multiplication grid

X	3	1	4	8	5	9	6	10	7	2
6										
1										
8										
5										
3										
4										
2										
10										
9										
7										