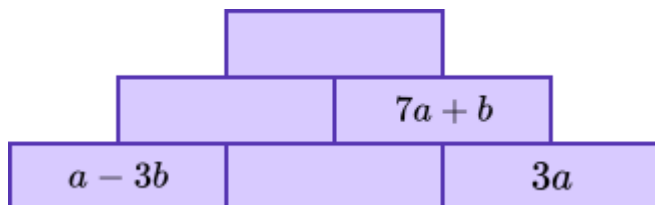THIRD SPACE
LEARNING

Algebra - Worksheet

1. In this pyramid, you add two adjacent blocks to find the value of the block above.

What expression will be in the top box?

a) 8*a* - 2*b*

b) 12*a* - *b*

c) 12*a* + 5*b*

d) 10*a* + *b*

2. Brian is a window cleaner. He uses the following formula to calculate the amount to charge his customers:

Charge = £20 + 4n
Where n is the number of windows a house has.
If a house has 7 windows, how much would Brian charge?

a) £24

b) £67

c) £48

d) £27

Algebra - Worksheet

3. The area of a rectangle is 4x-6.

$$Area = 4x - 6$$

Which of the following pairs could be the length and width of the rectangle?

a) $4x$ and $6x$

b) 4 and x-6

c) 2 and $2x$- 3

d) $2x$ and $2x$- 3

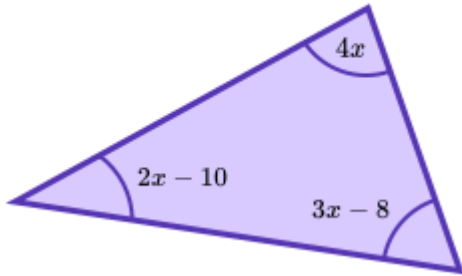**4. The formula for changing degrees Celsius to degrees Fahrenheit is**

$$F = \frac{9C}{5} + 32$$

Rearrange this formula to make C the subject.

a) C = $\frac{5(F-32)}{9}$

b) C = $\frac{5F-32}{9}$

c) C = $\frac{5F}{9}$- 32

d) C = 5F - $\frac{32}{9}$

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

2

Algebra - Worksheet

5. Work out the size of the smallest angle.

a) 20°

b) 26°

c) 8°

d) 34°

6. Jamie's dad is 4 times older than Jamie. In 14 years time, Jamie's dad will be twice the age of Jamie.

What is the sum of Jamie's age now and Jamie's dad's age now?

a) 70

b) 42

c) 22

d) 35

Algebra - Worksheet

7. Which of the following lines passes through the point (2, 5)?

a) $y = 2x - 1$

b) $y = 2x + 1$

c) $y = 4x - 2$

d) $y = 2x + 5$

---

8. Which of the following expressions has the smallest value when a=5 and b=-3?
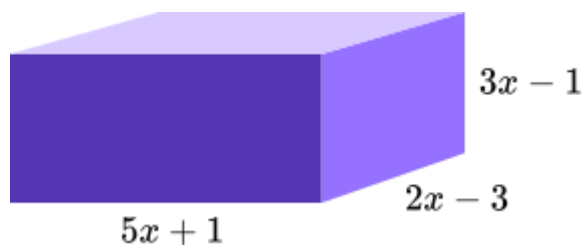
a) $\frac{1}{2}(a - b)$

b) ab

c) b^2

d) $b - 4a$

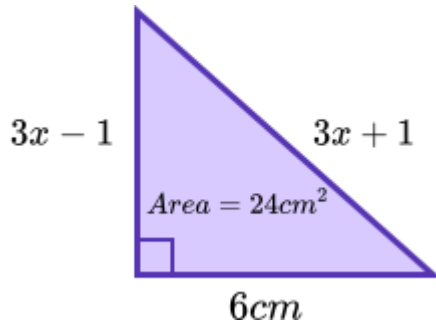**9. Find an expression in terms of x for the volume of this cuboid**

$3x - 1$

$2x - 3$

$5x + 1$

a) $30x^3 - 49x^2 + 4x + 3$

b) $30x^3 - 46x^2 - 8x - 3$

c) $30x^3 - 3$

d) $30x^3 + 3$

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

4

Algebra - Worksheet

10. The area of this triangle is 24cm^2

Work out the perimeter of the triangle.

a) 16cm

b) 24cm

c) 12cm

d) 9cm

---

11. Solve the equation $x + 2 - \dfrac{15}{x} = 0$

a) x = -2 or x = 15

b) x = -3 or x = 5

c) x = -5 or x = 3

d) x = -15 or x = 2

THIRD SPACE
LEARNING

Algebra - Worksheet

12. At a theme park the Jones family purchased 2 adult tickets and 3 child tickets for £48.
The Evans family purchased 3 adult tickets and 1 child ticket for £44.
Calculate the cost of one child.

a) £10

b) £8

c) £12

d) £6

13. Which of these lines is parallel to the line $2y = x + 7$

a) $3y = x + 7$

b) $y = 2x - 2$

c) $y = \frac{1}{2}x - 9$

d) $2y = 3x + 8$

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

6

Algebra - Worksheet

14. Find the minimum value of the function $f(x) = x^2 + 4x + 5$

a) 1

b) -2
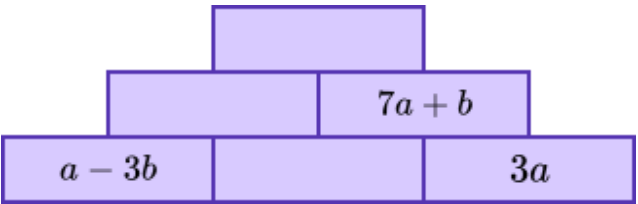
c) 5

d) 0

___

15. The diagram shows the circle $x^2 + y^2 = 25$. The line is a tangent to the circle at the point (3,4). Work out the equation of the line.
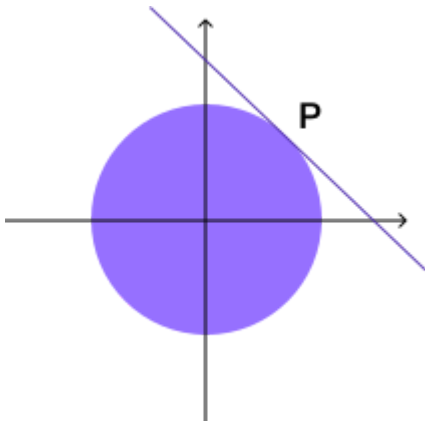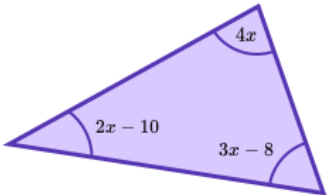

a) $y = 5x + 5$

b) $y = 3x + 4$

c) $y = \frac{-3}{4}x + 3$

d) $y = \frac{-3}{4}x + \frac{21}{4}$

Algebra - Answers

	Question	Answer
1	In this pyramid, you add two adjacent blocks to find the value of the block above. $7a + b$ $a - 3b$ $3a$ **What expression will be in the top box?** **a)** 8*a* - 2*b* **b)** 12*a* - *b* **c)** 12*a* + 5*b* **d)** 10*a* + *b*	**b)** 12*a* - *b*
2	Brian is a window cleaner. He uses the following formula to calculate the amount to charge his customers: **Charge = £20 + 4n** **Where n is the number of windows a house has.** **If a house has 7 windows, how much would Brian charge?** **a)** £24 **b)** £67 **c)** £48 **d)** £27	**c)** £48

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

8

Algebra - Answers

3	The area of a rectangle is 4x-6.	c) 2 and $2x$- 3
	$Area = 4x - 6$	
	Which of the following pairs could be the length and width of the rectangle?	
	a) $4x$ and $6x$	
	b) 4 and x-6	
	c) 2 and $2x$- 3	
	d) $2x$ and $2x$- 3	
4	**The formula for changing degrees Celsius to degrees Fahrenheit is**	**a)** C $=\frac{5(F-32)}{9}$
	$$F = \frac{9C}{5} + 32$$	
	Rearrange this formula to make C the subject.	
	a) C $= \frac{5(F-32)}{9}$	
	b) C $= \frac{5F-32}{9}$	
	c) C $= \frac{5F}{9}$- 32	
	d) C $= 5F -\frac{32}{9}$	
5	**Work out the size of the smallest angle.**	**d)** 34°
	$4x$ $2x - 10$ $3x - 8$	
	a) 20°	
	b) 26°	
	c) 8°	
	d) 34°	

THIRD SPACE
LEARNING

Algebra - Answers

6	Jamie's dad is 4 times older than Jamie. In 14 years time, Jamie's dad will be twice the age of Jamie. What is the sum of Jamie's age now and Jamie's dad's age now? **a)** 70 **b)** 42 **c)** 22 **d)** 35	**d)** 35
7	Which of the following lines passes through the point (2, 5)? **a)** $y = 2x - 1$ **b)** $y = 2x + 1$ **c)** $y = 4x - 2$ **d)** $y = 2x + 5$	**b)** $y = 2x + 1$
8	Which of the following expressions has the smallest value when a=5 and b=-3? **a)** $\frac{1}{2}(a - b)$ **b)** ab **c)** b^2 **d)** $b - 4a$	**d)** $b - 4a$

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

10

Algebra - Answers

9	Find an expression in terms of x for the volume of this cuboid $3x - 1$ $2x - 3$ $5x + 1$ **a)** $30x^3 - 49x^2 + 4x + 3$ **b)** $30x^3 - 46x^2 - 8x - 3$ **c)** $30x^3 - 3$ **d)** $30x^3 + 3$	**a)** $30x^3 - 49x^2 + 4x + 3$
10	The area of this triangle is **24cm²** $3x - 1$ $3x + 1$ $Area = 24cm^2$ $6cm$ **Work out the perimeter of the triangle.** **a)** $16cm$ **b)** $24cm$ **c)** $12cm$ **d)** $9cm$	**b)** $24cm$

Algebra - Answers

11	Solve the equation $x + 2 - \dfrac{15}{x} = 0$ **a)** $x = -2$ or $x = 15$ **b)** $x = -3$ or $x = 5$ **c)** $x = -5$ or $x = 3$ **d)** $x = -15$ or $x = 2$	**c)** $x = -5$ or $x = 3$
12	At a theme park the Jones family purchased 2 adult tickets and 3 child tickets for £48. The Evans family purchased 3 adult tickets and 1 child ticket for £44. **Calculate the cost of one child.** **a)** £10 **b)** £8 **c)** £12 **d)** £6	**b)** £8
13	Which of these lines is parallel to the line $2y = x + 7$ **a)** $3y = x + 7$ **b)** $y = 2x - 2$ **c)** $y = \dfrac{1}{2}x - 9$ **d)** $2y = 3x + 8$	**c)** $y = \dfrac{1}{2}x - 9$
14	Find the minimum value of the function $f(x) = x^2 + 4x + 5$ **a)** 1 **b)** -2 **c)** 5 **d)** 0	**a)** 1

thirdspacelearning.com   Helping schools close the maths attainment gap through targeted one to one teaching and flexible resources

12

Algebra - Answers
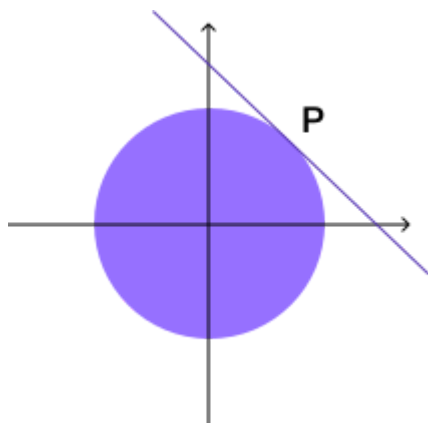
15	The diagram shows the circle $x^2 + y^2 = 25$. The line is a tangent to the circle at the point (3,4). Work out the equation of the line.	**d)** $y = \frac{-3}{4}x + \frac{21}{4}$
	P	
	a) $y = 5x + 5$ **b)** $y = 3x + 4$ **c)** $y = \frac{-3}{4}x + 3$ **d)** $y = \frac{-3}{4}x + \frac{21}{4}$	

Do you have KS4 students who need additional support in maths?

Our specialist tutors will help them develop the skills they need to succeed at GCSE in weekly one to one online revision lessons. Trusted by secondary schools across the UK.

Visit **thirdspacelearning.com** to find out more.