Name:

Exam Style Questions

Collecting Like Terms

Corbettmaths

Equipment needed: Calculator, pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Video 9

Answers and Video Solutions

1. Simplify $y + y$

2y

(1)

2. Circle the expression that is equal to $y + y + y - y$

$4y$ $\quad$ 3 $\quad$ $2y$ $\quad$ y^2

(1)

3. Simplify $4c + 2c$

6c

(1)

4. Simplify $8x - 2x + 4x$

10x

(1)

5. (a) Simplify $a + a + a$

3a

(1)

(b) Simplify $4a + 3a - a$

6a

(1)

(c) Simplify $4ac + 5ac$

9ac

(1)

(d) Simplify $4c - 6c$

-2c

(1)

(e) Simplify $a^2 + a^2$

$2a^2$

(1)

6. Simplify $6y - 5 + 2y$

$8y - 5$

(1)

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7. (a) Simplify $m + m + m + m$

$4m$

(1)

(b) Simplify $8c + 2p - 2c + 4p$

$6c + 6p$

(2)

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8. Simplify $3x + 4 - x + 7$

$2x + 11$

(2)

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9. Simplify $6a + 5w - 2a + w$

$4a + 6w$

(2)

10. Simplify $7x - 4y + 8x - y$

$15x - 5y$

(2)

11. (a) Simplify $9y - 3y$

$6y$

(1)

(b) Simplify $7y + 2w - 3y + 2w$

$4y + 4w$

(2)

(c) Simplify $7y + 10 + 3y - 9$

$10y + 1$

(2)

12. Simplify $4x + 7y + x - 4y$

$5x + 3y$

(2)

13. Simplify $5x + y - 2x + y$

$3x + 2y$

(2)

14. Simplify $3c - 10d - c + 4d$

$2c - 6d$

(2)

15. Simplify $20x + 3y - 8y - 7x$

$13x - 5y$

(2)

16. Simplify $8x - 6y + 3x - 3y$

$11x - 9y$

(2)

17. (a) Simplify $s + s + s + s - s$

3s

(1)

(b) Simplify $5c - 3s + 3c + 7s$

8c + 4s

(2)

(c) Simplify $8a + 3c - 5c + 3a$

11a - 2c

(2)

(d) Simplify $3a + 2w - 5a - 9w$

-2a - 7w

(2)

(e) Simplify $3y^2 + 2w^2 + y^2 - w^2$

$4y^2 + w^2$

(2)

18. (a) Simplify $2x + 2x$

$4x$

.....

(1)

(b) Simplify $7w - 2w$

$5w$

.....

(1)

(c) Simplify $3m - m$

$2m$

.....

(1)

(d) Simplify $y^2 + y^2 + y^2$

$3y^2$

.....

(1)

(e) Simplify $7h + 5k + h - 3k$

$8h + 2k$

.....

(2)

19. Troy is simplifying $x^3 + x^3$

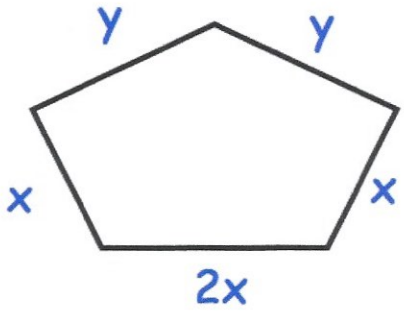
He says the answer is $2x^6$

Explain why Troy is wrong.

$x^3 + x^3 = 2x^3$, Troy should not change the power (cubed).

(1)

20. Shown is a pentagon.

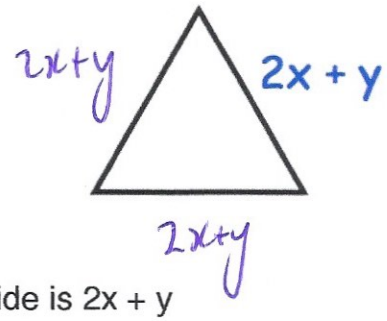


Find an expression, in terms of x and y, for the perimeter of the pentagon.

$4x + 2y$

(2)

21. Shown is a equilateral triangle.



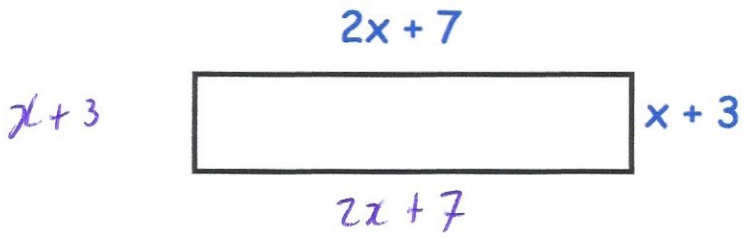
The length of each side is 2x + y

Find an expression, in terms of x and y, for the perimeter of the triangle.

6x + 3y

(2)

22. Shown is a rectangle.



Find an expression, in terms of x, for the perimeter of the rectangle.

2x + 7 + x+3 + 2x + 7 + x+3

6x + 20

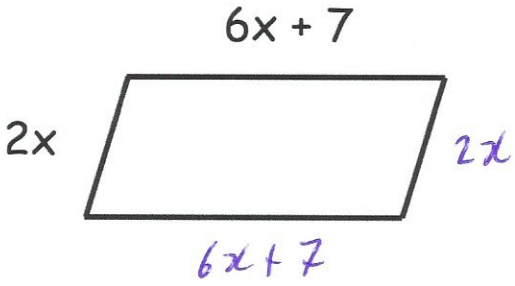
(2)

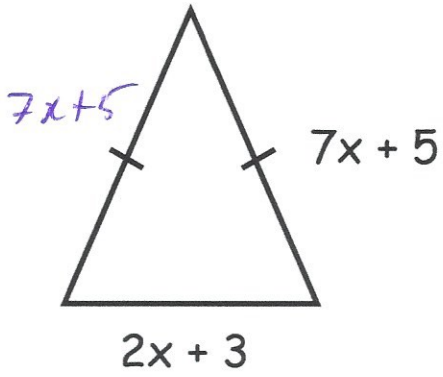
23. Simplify fully $2x^2 + 3x - 1 - x^2 + 2x - 5$

$x^2 + 5x - 6$

(2)

24. Below is a parallelogram and an isosceles triangle.





Which shape has the greatest perimeter?
Show your working.

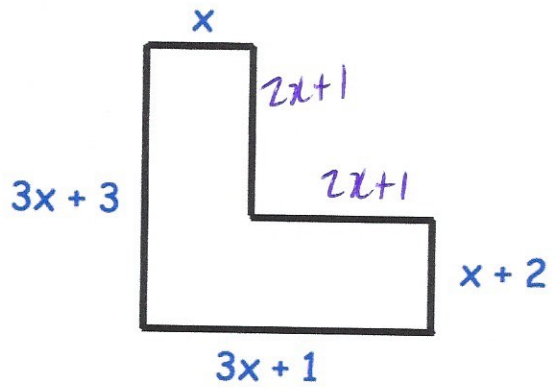
Parallelogram $2x + 6x + 7 + 2x + 6x + 7 = 16x + 14$

Triangle $7x + 5 + 7x + 5 + 2x + 3 = 16x + 13$

Parallelogram

(3)

25.



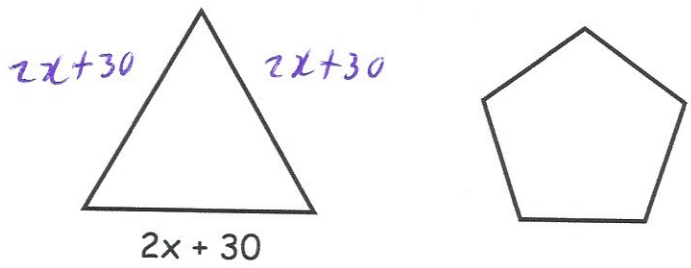
Find an expression, in terms of x, for the perimeter of this L shape.

$3x+3+3x+1+x+2+2x+1+2x+1+x$

$12x+8$

(3)

26. Here is an equilateral triangle and a regular pentagon.



The perimeter of the two shapes are equal.

Find an expression for the length of each side of the regular pentagon.

$2x+30+2x+30+2x+30 = 6x+90$

$(6x+90) \div 5 = 1.2x+18$

$1.2x+18$

(4)

27. Expand and simplify $3(x+6)+8$

$3x + 18 + 8$

$3x + 26$

$3x + 26$

(2)

28. Simplify fully $9(y-2)+4y+3$

$9y - 18 + 4y + 3$

$13y - 15$

(2)

29. Expand and simplify $5(x+3y)+2(2x-y)$

$5x + 15y + 4x - 2y$

$9x + 13y$

(3)

30. Expand and simplify $3(4x - 1) - 2(x + 4)$

$12x - 3 - 2x - 8$

$10x - 11$

(3)

31. Expand and simplify $3(4x + 8) - (7x - 2)$

$12x + 24 - 7x + 2$

$5x + 26$

(2)