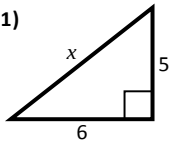
PYTHAGORAS

Exercise 1 – hypotenuse

Calculate the length of x, giving your answer where necessary to 2 decimal places (all sizes in centimetres).

1)



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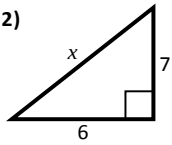

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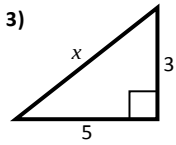

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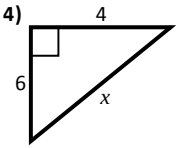

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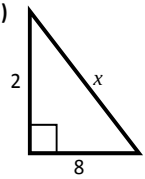

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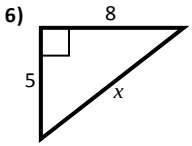

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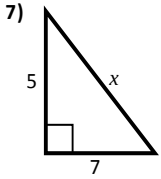

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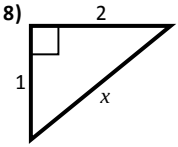

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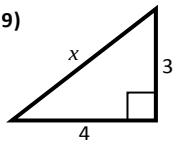

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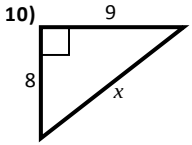

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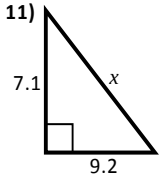

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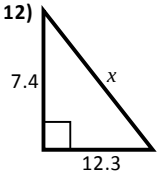

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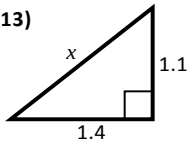

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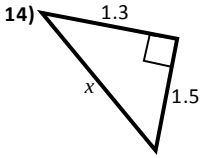

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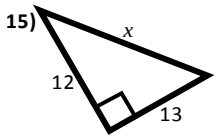

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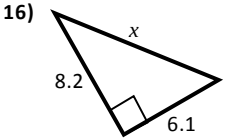

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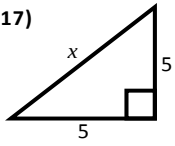

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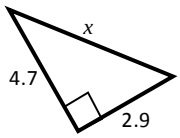

Exercise 2 – shorter side

Calculate the length of x, giving your answer where necessary to 2 decimal places (all sizes in centimetres).

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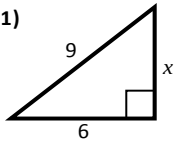

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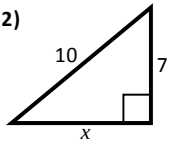

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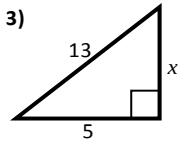

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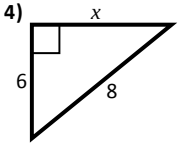

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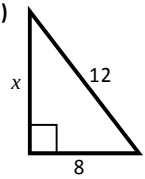

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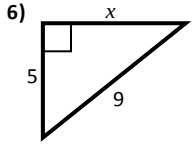

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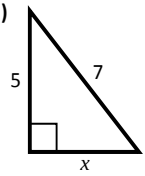

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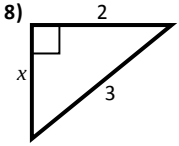

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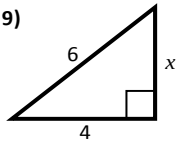

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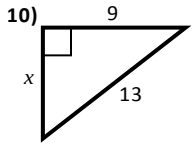

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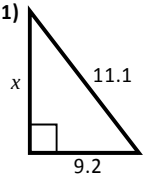

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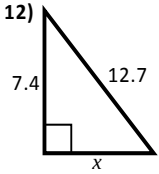

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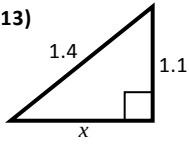

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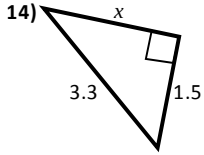

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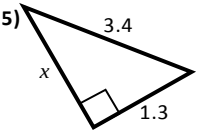

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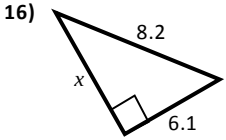

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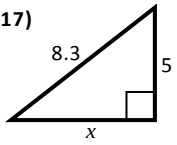

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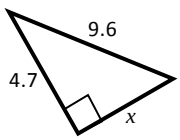
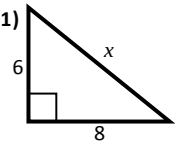


Exercise 3 – mixed

Calculate the length of x, giving your answer where necessary to 2 decimal places (all sizes in centimetres).

1)



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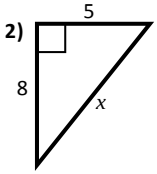

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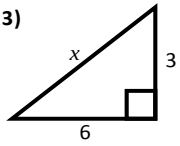

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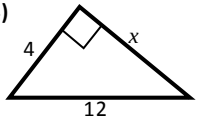

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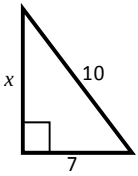

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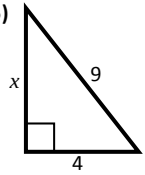

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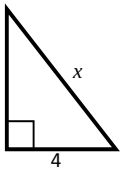

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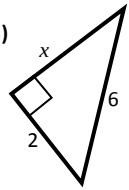

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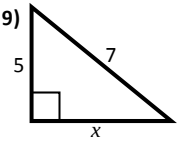

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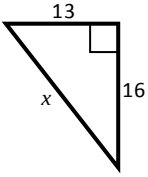

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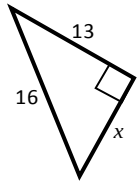

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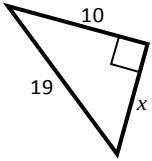

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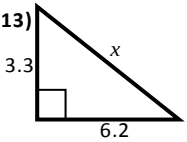

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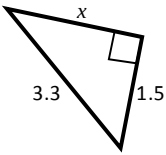

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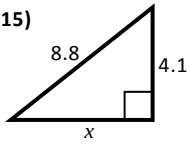

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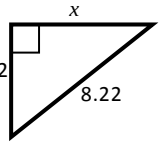

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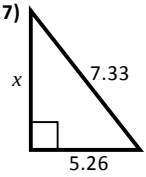

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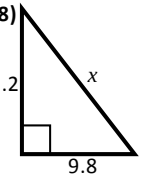

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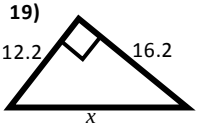

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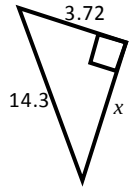


Exercise 4 – questions in context

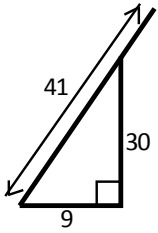
1) A ladder of length 12 feet is leaning against a wall. It reaches to a height of 10 feet. How far is the foot of the ladder from the wall?

2) The foot of a ladder is 5 feet from a wall. The ladder is 14 feet long. How far up the wall does the ladder reach?

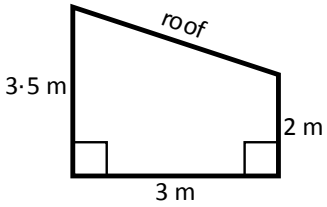
3) The foot of a ladder is 2 m from a wall. It reaches up to a height of 7 m. How long is the ladder?

4) A ladder 15 m long leans against a wall and reaches a window 14 m above the ground. Calculate the distance from the foot of the ladder to the wall.

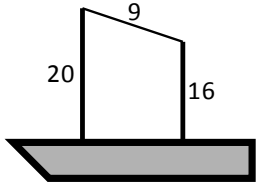
5) If a ladder 41 feet long is placed with its foot 9 feet from the bottom of a wall 30 feet high, how much of the ladder extends beyond the top of the wall?



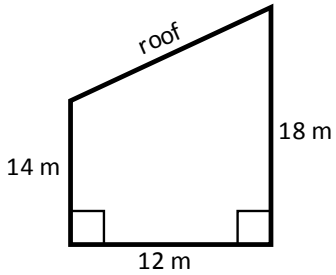
6) This diagram shows the gable end of a shed, with dimensions as shown in the diagram.
Calculate the length of the roof.



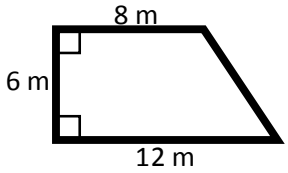
7) The tops of two masts on a ship are joined by a wire 9 m long. If the masts are 16 m and 20 m high, how far apart are they?



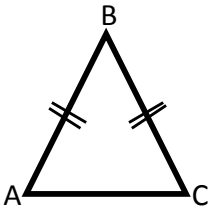
8) A barn has a sloping roof and is 14 m high at the front and 18 m high at the back. It is 12 m from front to back.
Calculate the length of the sloping roof.



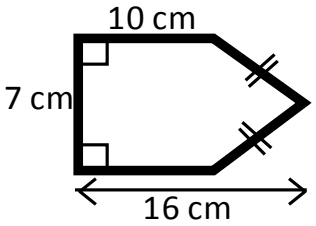
9) This is the diagram of a lawn. Kerb stones are put round the outside of the lawn. Calculate the total length of kerb stones required.



10) ABC is a lawn in the shape of an isosceles triangle. Kerb stones are put round the outside of the lawn. If the 'base' AC is 6 m, and the 'height' is 10m, calculate the total length of kerb stones required.



11) Calculate the perimeter of this shape.

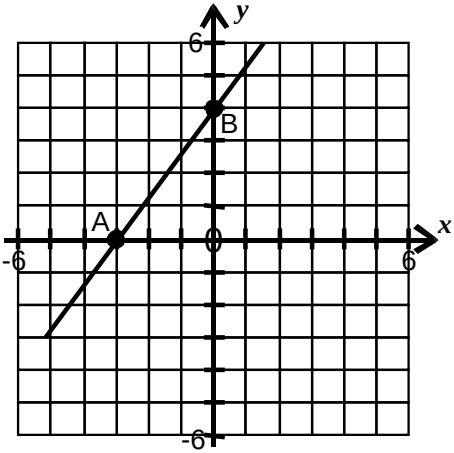


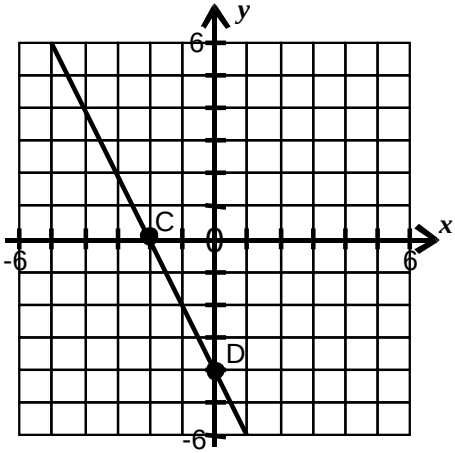
12) In a rectangular garden which measures 38 m by 21 m, a path goes diagonally from one corner to the opposite corner.
Calculate the length of the path.

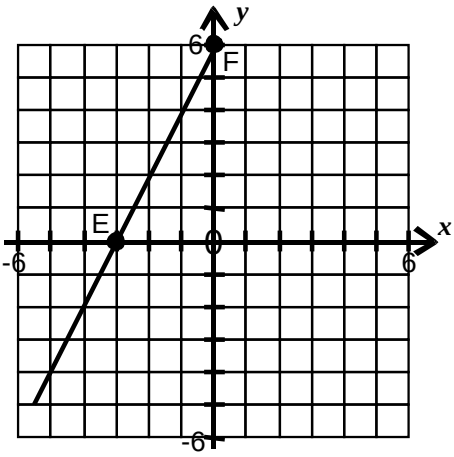
Pythagoras – using co-ordinates

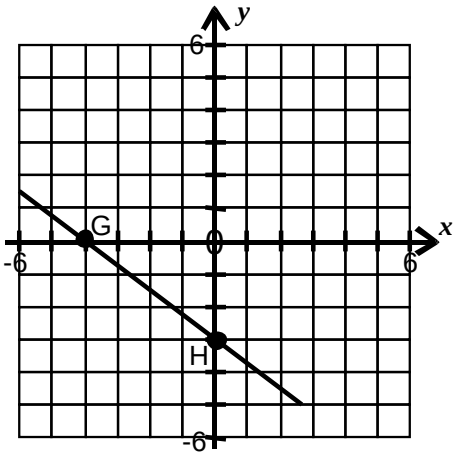
Exercise 1

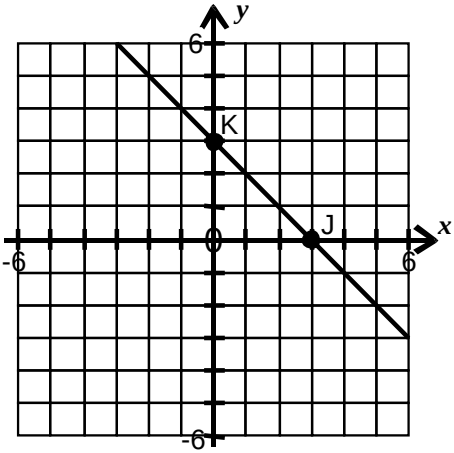
1) Calculate the length between each pair of points on the line.

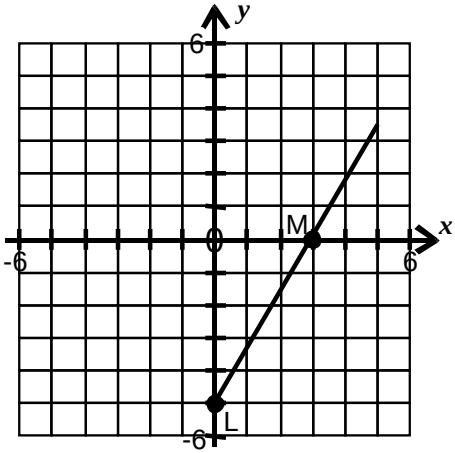




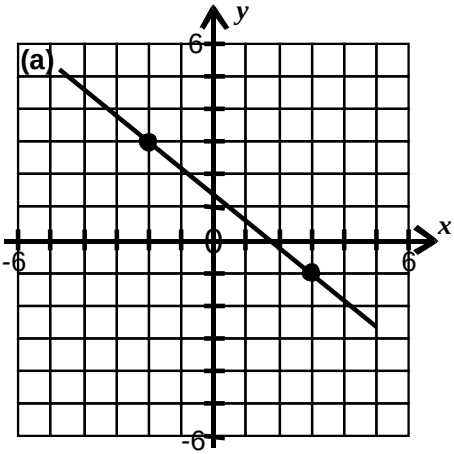


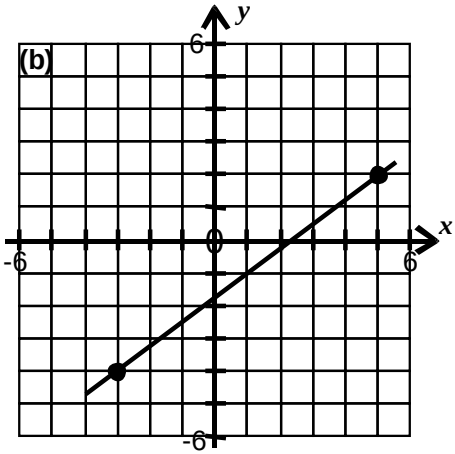


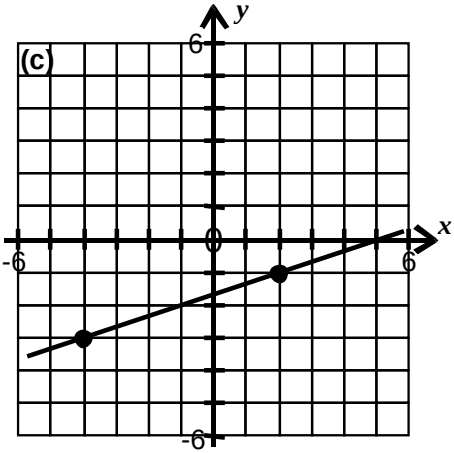


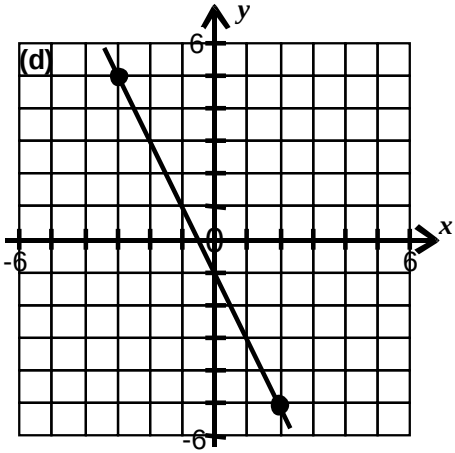


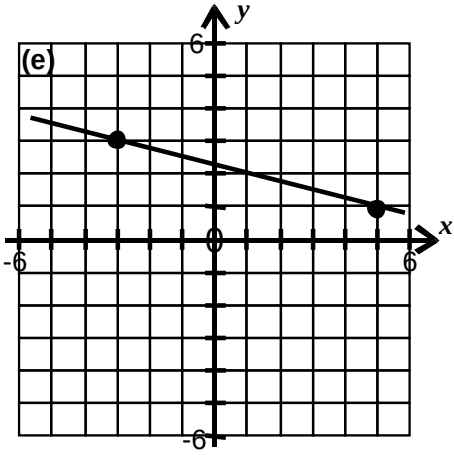
2) Calculate the length between each pair of points on the line.

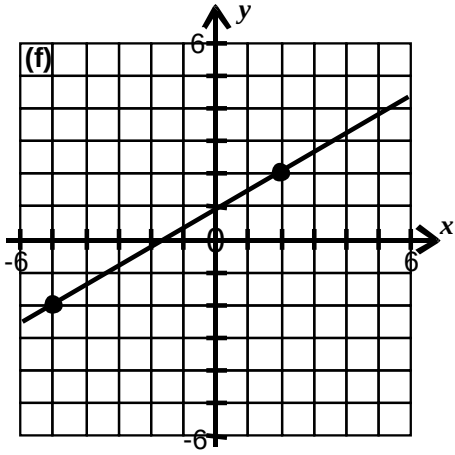




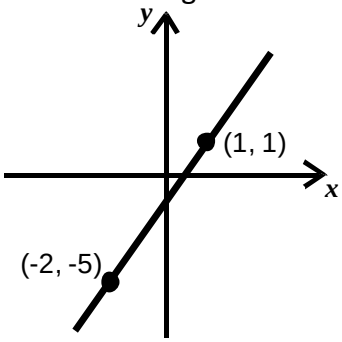




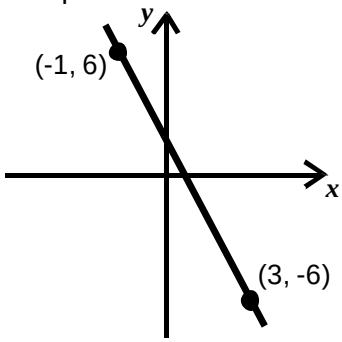




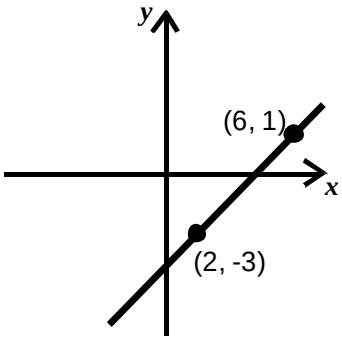
3) Calculate the length between each pair of points on the line.



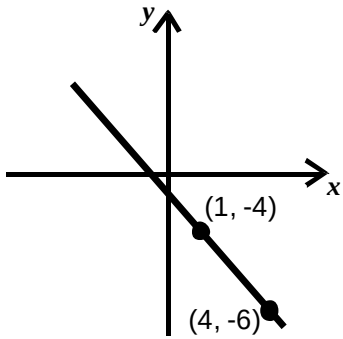
(a)



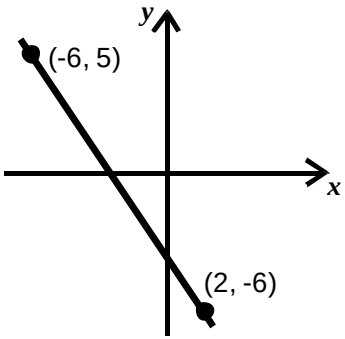
(b)



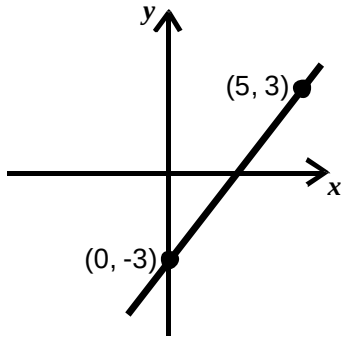
(c)



(d)



(e)



(f)

Exercise 2

Find the length of the line AB where

1) A(1 , 2) B(5 , 5) **2)** A(1 , 2) B(7 , 6) **3)** A(1 , 8) B(7 , 3)

4) A(–2 , 8) B(7 , 0) **5)** A(1 , 4) B(5 , –2) **6)** A(8 , 3) B(2 , –2)

7) A(6 , 1) B(4 , –4) **8)** A(–3 , 5) B(2 , 1) **9)** A(–4 ,–5) B(1 , –2)

Exercise 3

1) If A(3 , 1), B(7 , 6) and C(10 , –3) are the three corners of triangle ABC, find the length of all 3 sides.

2) If A(4 , –1), B(–3 , 3) and C(9 , 10) are the three corners of triangle ABC, find the length of all 3 sides.

3) If A(–2 , –4), B(–2 , 8) and C(6 , 0) are the three corners of triangle ABC, find the length of all 3 sides.

4) If A(1 , 0), B(-5 , 6) and C(3 , 6) are the three corners of triangle ABC, find the length of all 3 sides of triangle ABC

5) If A(–3 , 1), B(5 , –3) and C(1 , 5) are the three corners of triangle ABC, find the length of all 3 sides of triangle ABC