

$$1(a) \ 3x - 7 = 11$$

✓ 2/2

$$3x = 18$$

$$x = 6$$

$$1(b) \ 6^2 - 2(6) = 36 - 12 = 24$$

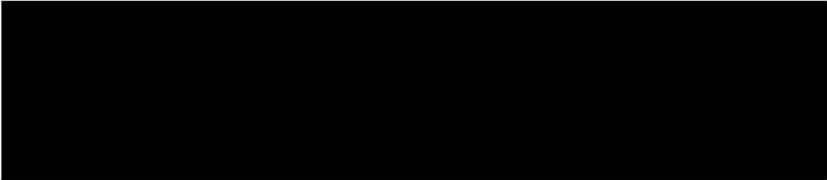
✓ 2/2

$$2. \ BC^2 = 7^2 + 5^2 - 2(7)(5)\cos 40$$

✓ 3/3

$$= 74 - 53.62 = 20.38$$

$$BC = 4.51 \text{ cm}$$


$$3(a) f'(x) = 3x^2 - 12x + 9$$

✓ 2/2

$$3(b) f'(1) = 3 - 12 + 9 = 0$$

✓ 2/2

so stationary point at $x = 1$

$$3(c) 3x^2 - 12x + 9 = 0$$

✓ 3/3

$$3(x - 1)(x - 3) = 0$$

$$x = 3, f(3) = 27 - 54 + 27 = 0$$

$(3, 0)$

$$4. P(A \text{ and } B) = 0.3 \times 0.5 = 0.15$$

✓ 3/3

$$P(A \text{ or } B) = 0.3 + 0.5 - 0.15 = 0.65$$

$$1(a) \quad 3x - 7 = 11$$

$$3x = 11 - 7 = 4$$

$$x = 4/3$$

~~X~~ 0/2

moved the 7 the wrong way

$$1(b) \quad (4/3)^2 - 2(4/3) = 16/9 - 24/9 = -8/9$$

✓ 2/2

$$2. \quad BC^2 = 49 + 25 - 70\cos 40$$

$$= 20.377$$

$$BC = 4.51$$

✓ 3/3

$$3(a) f'(x) = 3x^2 - 12x + 9$$

✓ 2/2

$$3(b) f'(1) = 3(1)^2 - 12(1) + 9 = 0$$

✓ 2/2

therefore stationary

$$3(c) 3x^2 - 12x + 9 = 0$$

✓ 3/3

$$x^2 - 4x + 3 = 0$$

$$(x - 1)(x - 3) = 0$$

$$x = 3, y = 0 \text{ so } (3, 0)$$

$$4. P(A \text{ or } B) = 0.3 + 0.5 = 0.8$$

✗ 0/3
overlap counted
twice

$$1(a) \ x = 6$$

✓ 2/2

$$1(b) \ 6^2 - 2 \times 6 = 24$$

✓ 2/2

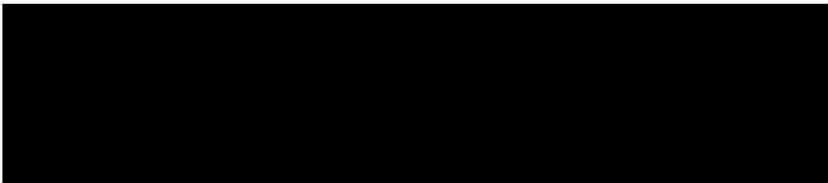
$$2. \ BC^2 = 7^2 + 5^2 - 2(7)(5)\cos 40$$

$$= 74 + 46.69$$

$$= 120.69$$

$$BC = 10.99$$

✓ 2/3
calculator mode?


$$3(a) f'(x) = 3x^2 - 12x$$

✓ 1/2
missing a term

$$3(b) f'(1) = 3(1)^2 - 12(1) = -9$$

✓ 1/2
check your $f'(x)$

3(c)

✗ 0/3

$$4. P(\text{neither}) = 0.7 \times 0.5 = 0.35$$

✓ 3/3

$$P(A \text{ or } B) = 1 - 0.35 = 0.65$$

$$1(a) 3x = 18$$

✓ 2/2

$$x = 6$$

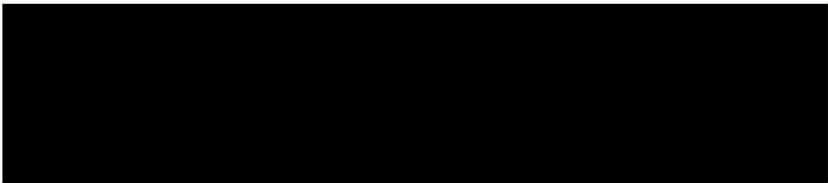
$$1(b) x^2 - 2x = 36 - 12 = 22$$

✓ 1/2
check the
subtraction

$$2. BC^2 = 7^2 + 5^2 - 2 \times 7 \times 5 \times \cos 40$$

✓ 3/3

$$BC = 4.51$$


$$3(a) f'(x) = 3x^2 - 12x + 9$$

✓ 2/2

$$3(b) f'(1) = 0 \text{ so it is stationary}$$

✗ 0/2
show the
substitution

$$3(c) 3(x - 1)(x - 3) = 0$$

✓ 3/3

$$x = 3$$

$$(3, 0)$$

$$4. 0.3 \times 0.5 = 0.15$$

✓ 3/3

$$0.3 + 0.5 - 0.15 = 0.65$$

$$1(a) \quad 3x - 7 = 11$$

✓ 2/2

$$3x = 18, x = 6$$

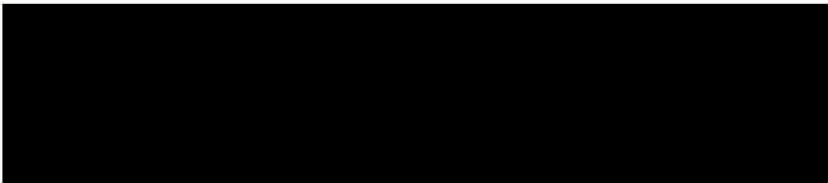
$$1(b) \quad 36 - 12 = 24$$

✓ 2/2

$$2. \quad BC^2 = 7^2 + 5^2 - 2(7)(5)\cos 40$$
$$= 20.38$$

✓ 2/3
3 s.f.

$$BC = 4.5 \text{ cm}$$


$$3(a) f'(x) = 3x^2 - 12x + 9$$

✓ 2/2

$$3(b) f'(1) = 3 - 12 + 9 = 0 \text{ so stationary}$$

✓ 2/2

$$3(c) 3x^2 - 12x + 9 = 0$$

$$x = 1 \text{ or } x = 3$$

other point (3, 27)

✓ 2/3
check $f(3)$

$$4. P(A \text{ and } B) = 0.15$$

✓ 3/3

$$P(A \text{ or } B) = 0.3 + 0.5 - 0.15 = 0.65$$

$$1(a) \ 3x - 7 = 11$$

✓ 2/2

$$3x = 18$$

$$x = 6$$

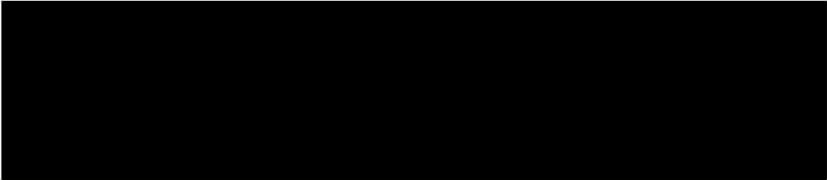
$$1(b) \ 6^2 - 2(6) = 24$$

✓ 2/2

$$2. \ BC^2 = 7^2 + 5^2 - 2(7)(5)\cos 40$$

✓ 3/3

$$BC = 4.514 \text{ cm}$$


$$3(a) f'(x) = 3x^2 - 12x + 9$$

✓ 2/2

$$3(b) f'(1) = 3 - 12 + 9 = 0$$

✓ 2/2

so stationary at $x = 1$

$$3(c) 3x^2 - 12x + 9 = 0$$

✓ 2/3
coordinates?

$$x = 3$$

$$4. P(A \text{ or } B) = 0.3 + 0.5 - (0.3)(0.5)$$

✓ 3/3

$$= 0.65$$

$$1(a) \ 3x = 18$$

✓ 2/2

$$x = 6$$

1(b)

✗ 0/2

2.

✗ 0/3



3(a)

~~X~~ 0/2

3(b)

~~X~~ 0/2

3(c)

~~X~~ 0/3

4.

~~X~~ 0/3

$$1(a) \ 3x - 7 = 11$$

✓ 2/2

$$3x = 18$$

$$x = 6$$

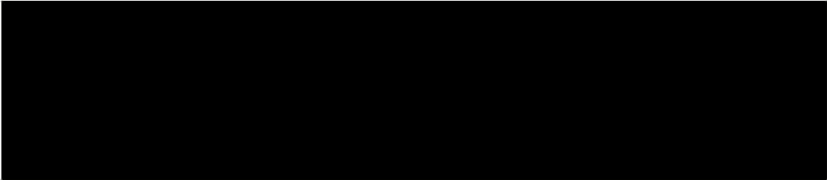
$$1(b) \ b^2 - 2(b) = 24$$

✓ 2/2

$$2. \ BC^2 = 7^2 + 5^2 - 2(7)(5)\cos 40$$

✓ 3/3

$$BC = 4.51$$


$$3(a) f'(x) = 3x^2 - 12x - 9$$

✓ 1/2

sign of the last term

$$3(b) f'(1) = 3 - 12 - 9 = -18$$

✓ 1/2

check your $f'(x)$

3(c)

✗ 0/3

$$4. P(\text{not } A \text{ and not } B) = 0.7 \times 0.5 = 0.35$$

✓ 3/3

$$1 - 0.35 = 0.65$$